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Oceans and the law of the sea

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Report of the Secretary-General

Addendum

Summary

The present report has been prepared as an addendum to the main annual report (A/59/62) in order to provide the General Assembly with an overview of developments relating to the implementation of the United Nations Convention on the Law of the Sea and the work of the Organization, its specialized agencies and other institutions in the field of ocean affairs and the law of the sea since the finalization of the main report in February 2004. It also constitutes a report of the Secretary-General presented to States Parties pursuant to article 319 of the Convention to be considered by the Meeting of States Parties under the agenda item: "Report of the Secretary-General under article 319 for information of States Parties on issues of a general nature relevant to States Parties that have arisen with respect to the Convention". The addendum should be read in conjunction with the main report, as well as the report on the work of the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea at its fifth meeting (A/59/122), the report of the fourteenth Meeting of States Parties (SPLOS/119), the report on the Global Marine Assessment International Workshop (A/59/126) and the report on sustainable fisheries (A/59/298). The addendum is divided into two parts: Part One covers new developments in ocean affairs and the law of the sea, including information relating to the Commission on the Limits of the Continental Shelf, the International Seabed Authority, State practice with regard to maritime space, safety of navigation, crimes at sea, protection of the marine environment, marine science and technology, settlement of disputes, capacity-building and international cooperation and coordination, including the establishment of UN-Oceans, the new inter-agency mechanism for ocean affairs and the law of the sea. Part Two responds to the request by the General Assembly for information regarding threats and risks to marine biodiversity beyond the limits of national jurisdiction and existing conservation and management measures.

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Abbreviations

ABE-LOS	IOC Advisory Body of Experts on the Law of the Sea
CBD	Convention on Biological Diversity
CEB	United Nations System Chief Executives Board for Coordination
CLCS	Commission on the Limits of the Continental Shelf
EEZ	Exclusive Economic Zone
FAL	IMO Facilitation Committee
FAL Convention	Convention on Facilitation of International Maritime Traffic
FAO	Food and Agriculture Organization of the United Nations
GEF	Global Environment Facility
GESAMP	Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection
GMA	Global Marine Environmental Assessment
GOOS	Global Ocean Observing System
GPA	Global Programme of Action for the Protection of the Marine Environment from Land-based Activities
HELCOM	Baltic Marine Environment Protection Commission (Helsinki Commission)
IAEA	International Atomic Energy Agency
IATTC	Inter-American Tropical Tuna Commission
ICJ	International Court of Justice
ICP	United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea
ICRI	International Coral Reef Initiative
I-GOOS	IOC-WMO-UNEP Committee for the Global Ocean Observing System
ILO	International Labour Organization
IMO	International Maritime Organization
IOC	Intergovernmental Oceanographic Commission of UNESCO
IPCC	Intergovernmental Panel on Climate Change
ISA	International Seabed Authority
ISPS	International Ship and Port Facility Security
ITLOS	International Tribunal for the Law of the Sea
IUU fishing	Illegal, unreported and unregulated fishing

LEG	IMO Legal Committee
LOSIC	Law of the Sea Information Circulars
LTC	Legal and Technical Commission of the International Seabed Authority
MARPOL 73/78	International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto
MEPC	IMO Marine Environment Protection Committee
MSC	IMO Maritime Safety Committee
NAV	IMO Subcommittee on Safety of Navigation
OECD	Organization for Economic Cooperation and Development
OEWG	Open-ended Working Group of the Basel Convention
OSPAR	Commission for the Protection of the Marine Environment of the North-East Atlantic
PAHs	Polycyclic aromatic hydrocarbons
PCBs	Polychlorinated biphenyls
POPs	Persistent Organic Pollutants
PSSAs	Particularly sensitive sea areas
RFMOs	Regional fisheries management organizations
SAR Convention	International Convention on Maritime Search and Rescue
SOLAS	International Convention for the Safety of Life at Sea
SPREP	South Pacific Regional Environment Programme
SUA Convention	Convention for the Suppression of Unlawful Acts against the Safety of Maritime Navigation
TSC	Train-Sea-Coast
UNCLOS	United Nations Convention on the Law of the Sea
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNODC	United Nations Office on Drugs and Crime
WCMC	World Conservation Monitoring Centre
WHO	World Health Organization
WMO	World Meteorological Organization
WSSCC	Water Supply and Sanitation Collaborative Council

Introduction

1. The main report of the Secretary-General on oceans and the law of the sea (A/59/62) commemorated the tenth anniversary of the entry into force of the United Nations Convention on the Law of the Sea (UNCLOS). The principles set out in UNCLOS for governing the various activities in the oceans and seas constitute a balanced and harmonious whole. They also demonstrate the close interrelationship among the many different issues involved. In this regard, although the twentieth anniversary of the signing of the Convention was celebrated two years ago and there have been many changes relating to the oceans, it is remarkable how much of UNCLOS has remained current and how much in the Convention presaged current concerns. With hindsight, the balance achieved in the Convention between the right of States to use the oceans and their resources and the need to protect and preserve the marine environment appears particularly prescient. Moreover, even before the recent increase in international concern about the conservation of marine biodiversity, the Convention set out the general principles and created the framework for its protection.

2. The conservation of marine biodiversity is now at the forefront of international consciousness. Following a number of international meetings on the subject in 2003, the General Assembly considered the issue and called upon all relevant international bodies to study the threats and risks to biodiversity, in particular in areas beyond national jurisdiction, and to urgently investigate how better to address them. In addition, it requested the Secretary-General to prepare an addendum to his annual report outlining the threats and risks, as well as existing conservation and management measures at all levels to deal with them. Part Two of this report responds to that request.

Part One
New developments

I. Introduction

3. Part One of this report provides an update on the main developments relating to oceans and the law of the sea since the various subjects were last reported upon, in most cases since February 2004. Some important developments are the Brazilian submission to the Commission on the Limits of the Continental Shelf (CLCS), the compromise solution regarding reports to the Meeting of States Parties under article 319, progress at the International Seabed Authority (ISA) in the development of regulations for prospecting and exploration for polymetallic sulphides and cobalt crusts, and, finally, the formation of the long-awaited mechanism for inter-agency cooperation on oceans and the coastal areas: UN-Oceans.

II. The United Nations Convention on the Law of the Sea and its implementing Agreements

A. Status of the Convention and its implementing Agreements

4. Since the issuance of the main report (A/59/62), there have been no changes in the status of UNCLOS or the Agreement relating to the implementation of Part XI of UNCLOS. However, on 13 July 2004, Kenya acceded to the 1995 United Nations Fish Stocks Agreement. Thus, at 13 July 2004, the number of Parties to UNCLOS remained at 145, the number of Parties to the Agreement on Part XI at 117, while the number of Parties to the Fish Stocks Agreement rose to 52. These numbers include the European Community, which is party to all three instruments.

5. There have been no new declarations or statements made under articles 287, 298 or 310 of UNCLOS. Similarly, there have been no withdrawals of declarations or statements that are not in conformity with UNCLOS (see General Assembly resolution 58/240, para. 4). Equally, there have been no new declarations or statements made under article 47 of the Fish Stocks Agreement.

B. Meeting of States Parties

6. The fourteenth Meeting of States Parties was held in New York from 14 to 18 June 2004 under the Presidency of Ambassador Allieu Kanu of Sierra Leone. The Meeting considered a number of financial and administrative issues relating to the International Tribunal for the Law of the Sea (ITLOS). It received the 2003 annual report on ITLOS activities presented by its President and heard statements from the Secretary-General of the International Seabed Authority (ISA) and the Chairman of the Commission on the Status of the Continental Shelf (CLCS) on recent developments in those institutions. Another important matter was the discussion of issues related to UNCLOS article 319.[1]

7. *Financial and administrative issues*. The Meeting considered the first biennial budget of the Tribunal prepared in euros. In preparing the budget, the Tribunal used an evolutionary approach that would optimize efficiency and apply the principle of

nominal zero growth.[2] States Parties approved the amount of $15,506,500 to cover the financial period 2005-2006.[3] In accordance with the decision taken by the thirteenth Meeting of States Parties, a ceiling rate of 22 per cent will be applied to this budget period.[4] It was decided that the Tribunal should finance overexpenditure in the 2004 budget by transfers between appropriations sections as far as possible and, if necessary, by using the savings from the 2002 financial period up to US$ 500,000. The remaining amount of savings from the 2002 budget is to be deducted from the contributions of States Parties for the 2005-2006 budget period. The Meeting also discussed and took note of the Financial Rules of the Tribunal, which had been produced pursuant to regulation 10.1 (a) of the Financial Regulations.

8. *Matters related to article 319 of UNCLOS.* During the discussion of this item, a number of delegations reiterated the views they had expressed at earlier meetings in favour of or against the inclusion of substantive matters on the agenda of future Meetings of States Parties.[5] Those delegations in favour of the inclusion of the item on the agenda and of a broader role for the Meeting of States Parties argued that the Meeting of States Parties represented the logical forum for the discussion of all issues pertaining to the implementation of UNCLOS. A more substantive role for the Meeting of States Parties, according to them, was not only consistent with the Preamble to the Convention but also with the unifying nature of that instrument, known as "the constitution of the oceans". Furthermore, a substantive discussion would increase the effectiveness and usefulness of the Meeting of States Parties. Other delegations noted that there were other forums dealing with matters related to oceans and the law of the sea, given the breadth of concerns relating to governance of the world's oceans. Particular reference was made to the General Assembly, the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea (ICP) and other United Nations agencies involved in the implementation of UNCLOS, such as the International Maritime Organization (IMO), the Food and Agriculture Organization of the United Nations (FAO) and ISA. Article 319, therefore, should be interpreted as giving the Meeting of States Parties only an administrative and budgetary role. Periodic reviews of the Convention were not envisaged in that article.

9. Some delegations occupying a middle-ground position agreed that the Meeting of States Parties constituted the logical forum for the discussion of matters pertaining to the implementation of UNCLOS, but they considered that such discussion should not be tantamount to a periodic review of the Convention or to the amendment procedures set out in its articles 312, 313 and 314.

10. The reporting function of the Secretary-General to the Meeting of States Parties was also discussed. It was suggested that the Secretary-General should resume his reporting function in accordance with article 319, paragraph 2 (a). Some delegations believed that article 319 reports should be separate from the annual report of the Secretary-General to the General Assembly. Others believed that the annual report of the Secretary-General fulfilled the requirement of article 319, paragraph 2 (a), and that the provision of that article referred to all States Parties and not to the Meeting of States Parties.

11. In response to enquiries, the Director of the Division for Ocean Affairs and the Law of the Sea presented information which is included in paragraph 83 of the report of the fourteenth Meeting of States Parties (SPLOS/119).

12. In order to reach consensus on this agenda item, the President of the Meeting established a group of "Friends of the President" to carry out informal consultations. After extensive deliberations by that group, the President put forward the following compromise proposal, which was approved by the Meeting: "The annual report of the Secretary-General on oceans and the law of the sea presented before the General Assembly should make reference to the fact that it is also presented to States Parties pursuant to article 319 of the Convention." The compromise proposal, in addition, contained a new item entitled "Report of the Secretary-General under article 319 for the information of States Parties on issues of a general nature relevant to States Parties that have arisen with respect to the United Nations Convention on the Law of the Sea" to be included on the agenda of the fifteenth Meeting.

13. *Presentation by the Registrar of the Tribunal.* The Registrar, Philippe Gautier, provided an overview of the work of the Tribunal, as well as of its competence and the procedural aspects of proceedings. He also briefly recounted the case law of the Tribunal since its establishment. The President of the Meeting noted that States needed to be familiar with the Tribunal's internal judicial practice and the guidelines for the preparation and submission of cases before the Tribunal, in order to avail themselves of its dispute settlement services.

III. Maritime space

A. The continental shelf beyond 200 nautical miles: the work of the Commission on the Limits of the Continental Shelf

14. *Work of the Commission on the Limits of the Continental Shelf.* At its thirteenth session, held from 26 to 30 April 2004, CLCS finalized the review of its procedures by adopting a revised set of Rules of Procedure (CLCS/40).[6] Annex III to the Rules of Procedure contains the "Modus operandi for the consideration of a submission made to the Commission on the Limits of the Continental Shelf" consolidating the Modus Operandi of the Commission, formerly contained in document CLCS/L.3, and the internal procedure of the subcommission of CLCS, formerly contained in document CLCS/L.12. In addition, the Commission adopted several amendments to the Rules of Procedure. The process of revision was carried out on the basis of the practical experience gained by the Commission from receiving and examining its first submission, that of the Russian Federation.

15. The consolidation of all existing procedural rules into a single basic document will make them easier to understand and will facilitate their application and interpretation by coastal States wishing to make a submission. Pursuant to this revision of the Rules of Procedure, the recommendations of CLCS will include an executive summary, which the Secretary-General will make public through appropriate United Nations channels.

16. During its thirteenth session, CLCS was updated on progress made in the preparation of a training manual to assist States in acquiring the knowledge and skills necessary to prepare a submission on the outer limits of the continental shelf. The manual, which is being developed by the Division for Ocean Affairs and the Law of the Sea with the assistance of two members of the Commission, acting as coordinators, is at an advanced stage of preparation. At the same time, the Commission stands ready to provide any scientific and technical advice requested

by States preparing submissions. Information regarding the provision of such advice may be found on the Commission's web page located on the web site of DOALOS at www.un.org/Depts/los/clcs_new/clcs_home.htm.

17. In addition, the Division for Ocean Affairs and the Law of the Sea manages two trust funds, one to assist members of CLCS in the performance of their duties and the second to aid coastal States intending to make a submission to the Commission.[7]

18. *Letter of the Russian Federation to the Commission.* At the thirteenth session, the Commission considered the letter addressed to the Chairman of the Commission on 3 June 2003 by the Deputy Minister for Natural Resources of the Russian Federation. The letter contained comments and questions concerning the recommendations of the Commission on the Russian submission. A draft response to the letter was prepared by the members of the subcommission that had dealt with the Russian submission. The full Commission endorsed this draft, which was then sent to the Deputy Minister of the Russian Federation, signed by the Chairman of the Commission.

19. *Other submissions to the Commission.* On 17 May 2004, Brazil delivered its submission to the Commission through the secretariat. The Commission will begin consideration of that submission at its fourteenth session, to be held from 30 August to 3 September 2004, followed by two weeks of meetings of a subcommission to be established for this purpose, which will examine in detail the Brazilian submission. Two sessions of the Commission are tentatively scheduled for 2005, from 4 to 8 April and from 29 August to 2 September. If necessary, each session will be followed by two weeks of subcommission meetings.

20. On 16 January 2004 the Division addressed a note verbale to coastal States whose time for submissions to the Commission expires in 2009. They were requested to provide information on the tentative timing of their potential submissions. In response to the note verbale, the Division was informed that Australia would make its submission before the end of 2004, Ireland in 2005, Nigeria before August 2005, Tonga between January 2005 and December 2006, Norway not before 2006, Namibia and Sri Lanka in 2007 and Pakistan in 2007/8. Five other States replied that they were not in a position to determine an exact date for the completion of the preparation of their submissions. Since few replies were received to the note verbale of 16 January 2004, on 9 July 2004 the Division for Ocean Affairs and the Law of the Sea circulated a second note to those coastal States that had not responded, emphasizing that the information requested was crucial for the preparation of the schedule of future sessions by the Commission for the period 2005-2009. In response, the Marshall Islands stated that it was not considering making a submission, the United Kingdom of Great Britain and Northern Ireland that it would make its submission before 2007, Myanmar that it would do so before the 2009 deadline and Guyana that it was in the process of completing its desktop study with a view to submitting it before the 2009 deadline. This information will enable the Commission to arrange its work schedule for this period and will guide the Division in organizing the necessary preparatory work.

B. The Area: the work of the International Seabed Authority

21. The tenth annual session of ISA was held from 24 May to 4 June 2004. This year marked the tenth anniversary of the entry into force of UNCLOS and the establishment of the Authority. ISA celebrated the occasion with a two-day commemorative session on 25 and 26 May 2004. At the inaugural meeting of the commemorative session, statements were made by the President of the Assembly of the Authority, Dennis Francis; the Secretary-General of the Authority, Satya N. Nandan; the Prime Minister of Jamaica, P. J. Patterson; the Secretary-General of the United Nations, through the Acting Legal Counsel; the President of the International Tribunal for the Law of the Sea, L. D. M. Nelson; and the Chairman of the Preparatory Commission for the International Seabed Authority and for the International Tribunal for the Law of the Sea, José Luis Jesus. Messages were also received from the President of the Third United Nations Conference on the Law of the Sea, T. T. B. Koh, and the former Prime Minister of Tanzania and first Chairman of the Preparatory Commission, Joseph Warioba. Chairmen of the regional groups also made statements. Following the inaugural session, two panel discussions were held: one on the achievements of ISA in its first 10 years and the other on the direction of its future activities.

22. The substantive work of ISA at its tenth session focused on the development of regulations for prospecting and exploration for polymetallic sulphides and cobalt crusts (ISBA/10/LTC/WP.1). The Legal and Technical Commission (LTC) of the Authority, which met a week prior to the tenth session and continued its deliberations until 28 May, completed its consideration of the draft regulations. LTC was assisted by three internationally renowned experts: James R. Hein,[8] Peter Herzig[9] and Kim Juniper,[10] who had reviewed the draft regulations and participated in the discussion.

23. LTC completed its work with the general understanding that, as far as practicable, the new regulations should follow the framework of the regulations for polymetallic nodules and be in conformity with the provisions of the Convention and the Agreement relating to implementation of Part XI of the Convention. However, in view of the difference in geometry and dimensions of the deposits of polymetallic sulphides and cobalt crusts, some essential differences are unavoidable. These relate to the size of the exploration area, relinquishment provisions and the system of exploration. The draft regulations propose a size of exploration area for both resources of 10,000 square kilometres, consisting of 100 contiguous blocks, each of approximately 10 by 10 kilometres. As for the scheme of relinquishment, the draft regulations provide an option to an applicant either to opt for the parallel system as is the case with polymetallic nodules, or to choose to participate in an equity interest, joint venture or production-sharing arrangement.[11] The Council of the Authority decided that it needed time to study the draft before beginning discussion at the eleventh session, which will be held in Kingston from 15 to 26 August 2005.

24. ISA will supplement these new regulations with recommendations on the establishment of environmental baselines, as guidelines to be proposed by LTC following a workshop on "Polymetallic sulphides and cobalt crusts — their environment and considerations for the establishment of environmental baselines and associated monitoring programme for exploration and mining", to be held in Kingston from 6 to 11 September 2004.

25. The Assembly of the Authority elects half of the members of the Council every two years. This year the Assembly elected the following States in the various categories in the Council to serve for a four-year term, from January 2005 to December 2008: Group A: Japan and China; Group B: United Kingdom and India; Group C: Portugal and South Africa (in this group, by special arrangement between them, Canada will replace Australia for the remainder of Australia's two-year term); Group D: Brazil, Malaysia and the Sudan; Group E: Gabon, Namibia, Senegal, Kenya, Poland, the Netherlands, Spain, the Czech Republic, Argentina, Guyana and Trinidad and Tobago.

26. Upon recommendations of the Finance Committee and the Council, the Assembly approved the biennium budget for the financial period 2005-2006 in the amount of US$ 10,817,600.

27. At this session, the Assembly re-elected Satya N. Nandan as Secretary-General for a further four-year term.

28. In his report to the fourteenth Meeting of States Parties in June 2004, the Secretary-General of the Authority briefly outlined the work of the Authority at its tenth session. He informed the Meeting that the Authority was in the process of developing a geological model for polymetallic nodule deposits in the Clarion-Clipperton Zone in order to incorporate scientific findings relating to the continuity of nodule deposits and proxy data on high-grade and high-abundance nodule deposits for resource assessment. This is a multi-year project that will form an important component of the work of the Authority for the period 2005-2007.

29. The Secretary-General also informed the Meeting about progress on the Kaplan project.[12] ISA is collaborating with the Census of the Diversity of Abyssal Marine Life project of the Census of Marine Life to be able to compare results from the Kaplan project with other studies.

30. *Developments at ISA relating to biological diversity in the Area.* The draft regulations, prepared by LTC, for the prospecting and exploration of polymetallic sulphides and cobalt crusts contain extensive provisions on the protection and preservation of the marine environment in which these resources are found, taking into account the special sensitivity of the biological communities found in these environments. During its 2004 session, LTC held an open meeting to gather information and improve understanding of seabed biodiversity and the management and legal status of the living organisms in the Area. The discussions revealed a need to address these issues taking into account the work of other relevant organizations.[13] ISA continues to hold workshops to consider environmental issues, for example, the workshop referred to in paragraph 24 above.

C. Maritime claims and the delimitation of maritime zones

31. Since the issuance of the main report, the following developments have been brought to the attention of the Division.

32. *African region.* On 19 September 2003, Cape Verde and Mauritania concluded a Treaty on the Delimitation of the Maritime Frontier.

33. The Cameroon-Nigeria Mixed Commission, which was established pursuant to a joint communiqué adopted at a meeting held on 15 November 2002 in Geneva

between the Presidents of Cameroon and Nigeria, in the presence of the Secretary-General of the United Nations, held its tenth meeting in Abuja on 1 and 2 June 2004. At that meeting, the Mixed Commission adopted the terms of reference and work plan elaborated by the Working Group on the Maritime Boundary at its first meeting on 28 May 2004 in Abuja. In December 2004 the Working Group will issue a map featuring a delineation of the maritime boundary as delimited by the International Court of Justice (ICJ) in its judgment of 10 October 2002; it will submit its report, including recommendations, to the Mixed Commission in February 2005.

34. On 6 July 2004, the Presidents of Equatorial Guinea and Gabon signed in Addis Ababa, in the presence of the Secretary-General of the United Nations, a memorandum of understanding relating to an agreement on the joint development of petroleum and other resources in areas of the exclusive economic zones (EEZ) of the two States located in the Bay of Corisco. The Secretary-General's Special Adviser and mediator, Yves Fortier, and his team will pursue their efforts to assist both countries in finding a consensual settlement of the issues of sovereignty over three small islands in that bay (Mbanié, Cocotiers and Congas islands) and of their land and maritime boundary. Welcoming the signing of the memorandum of understanding and the overall commitment of both Heads of State to reaching a peaceful settlement of the dispute, the Secretary-General said that their willingness to pursue that approach was an example to other leaders of how differences between States could be resolved peacefully.

35. On 22 July 2004, at a meeting of a joint technical committee in Abuja, Nigeria and Benin amicably resolved a dispute over their land and maritime boundary, the latter with reference to UNCLOS. The decisions of the committee are subject to approval by an inter-ministerial meeting of the two countries, which should be held in August.

36. *Asian and South Pacific region.* On 30 June 2004, China and Viet Nam exchanged instruments of ratification of the agreement on the delimitation of the territorial sea, the EEZ and the continental shelf of the two countries in the Gulf of Tonkin, signed on 25 December 2000 in Beijing. The agreement thus entered into force. This instrument, together with an accompanying agreement on fisheries cooperation in the Gulf of Tonkin, should, according to both parties, ensure long-term stability and peace in that area.

37. In April, Australia and Timor-Leste held another round of talks on the issue of a permanent delimitation of their maritime boundary. According to news reports, Timor-Leste has expressed its desire for an early conclusion of these negotiations, linking such progress to its ratification of the Agreement between the Government of Australia and the Government of Timor-Leste relating to the Unitization of the Sunrise and Troubadour Fields, signed on 6 March 2003.

38. On 25 July 2004, Australia and New Zealand signed the Treaty between the Government of Australia and the Government of New Zealand establishing Certain Exclusive Economic Zone and Continental Shelf Boundaries, which will settle boundaries in the largest outstanding undelimited ocean area adjacent to Australia in the Tasman Sea and the south-western Pacific and Southern Oceans. The treaty will provide certainty of jurisdiction over both the water column and seabed, including over fisheries and petroleum resources, as well as in relation to protecting and preserving the marine environment and undertaking marine scientific research.

39. *Mediterranean region*. Referring to the declaration by Croatia, on 3 October 2003,[14] of an ecological and fisheries protection zone in the Adriatic Sea, Italy notified the Secretary-General of its view that article 123 of UNCLOS places on States Parties that are bordering or not bordering enclosed or semi-enclosed seas the obligation to cooperate in the management, conservation, exploration or exploitation of living resources of the sea, in the protection and preservation of the marine environment and in scientific research. Italy stated that this obligation to cooperate does not cease if a coastal State bordering an enclosed or semi-enclosed basin decides to establish reserved zones of functional jurisdiction and that such an obligation should consist specifically in cooperating in determining the limits of the zone of functional jurisdiction, i.e. in agreeing on those limits with other interested States, in compliance also with article 74 of UNCLOS. According to the note by Italy, the obligation to cooperate was not fulfilled by Croatia when declaring the ecological and fisheries protection zone.

40. Italy further stated that, in any case, the determination of the limit of the ecological and fisheries protection zone coinciding with the delimitation contained in the 1968 agreement concluded between Italy and the former Socialist Federal Republic of Yugoslavia, concerning the continental shelf, was against Italian interests in the Adriatic Sea. Italy added that the automatic extension of the delimitation of the seabed, agreed in 1968, was not legally well founded because that limit had been agreed on the basis of special circumstances that differed from the circumstances to be considered in the determination of superjacent waters, and the 1968 delimitation had been agreed when the notion of the EEZ was not well defined in the international law of the sea. Italy pointed out that such an extension was against Italian interests because it did not take into account the change of relevant geographical circumstances that took place after the conclusion of the 1968 agreement, which implied a consequential change of the objective parameter of the median line.

41. On 2 July 2004, Croatia informed the Secretary-General that, on 3 June 2004, the Croatian Parliament had adopted a Decision on Amending the Decision on the Extension of the Jurisdiction of the Republic of Croatia in the Adriatic Sea of 3 October 2003. By this decision of 3 June 2004, the implementation of the legal regime of the ecological and fisheries protection zone in the Adriatic Sea will commence with regard to the member States of the European Union after the conclusion of a fisheries partnership agreement between Croatia and the European Community. With regard to all other States, the implementation of the legal regime will commence on 3 October 2004, as originally provided for in the decision of 3 October 2003.

42. On 8 July 2004, Croatia transmitted to the Secretary-General a communication with reference to the note of Slovenia of 7 November 2003,[15] which was circulated to States Parties to UNCLOS. In that communication, Croatia stated that, taking into consideration the provisions contained in UNCLOS, it regarded the arguments presented in the note of Slovenia as legally unfounded and that it rejected the assertions contained therein.

43. In the communication it was stated that the outer limit of the ecological and fisheries protection zone of Croatia should be determined through delimitation agreements with the States whose coasts were opposite or adjacent to the Croatian coast, once they also extended their jurisdiction in accordance with international

law, and that, pending the conclusion of the delimitation agreements, the limits of the ecological and fisheries protection zone of Croatia temporarily followed the delimitation line of the continental shelf between Croatia and Italy, and the line following the direction of and continuing on the provisional delimitation line of the territorial seas between Croatia and Serbia and Montenegro. In the communication, it was further emphasized that the proclamation of the zone was without prejudice to the yet to be delimited sea border between Croatia and Slovenia.

44. Croatia further stated that negotiations on the delimitation of the sea border had been conducted for several years, but that no mutually accepted agreement had been reached and no treaty had been signed. Following a detailed overview of the issue at question, Croatia stated its readiness to cooperate with its neighbours in accordance with article 123 of UNCLOS. In conclusion, the communication pointed out that, after failing to reach an agreement on the delimitation of the sea border between the two States, Croatia had on numerous occasions invited Slovenia to submit the question to an international judicial body in order to obtain a binding decision.

45. On 2 April 2004, the House of Representatives of Cyprus enacted two laws: a law to provide for the proclamation of the contiguous zone by the Republic of Cyprus and a law to provide for the proclamation of the EEZ by the Republic of Cyprus. Both laws indicate that the date of their entry into force is 21 March 2003.

46. *Caribbean region*. On 2 December 2003, Barbados and Guyana concluded an EEZ cooperation treaty concerning the exercise of jurisdiction in their EEZs in the area of bilateral overlap within each of their outer limits and beyond the outer limits of the EEZs of other States.

47. In June 2004, an arbitral tribunal was established under annex VII to UNCLOS to settle the maritime boundary dispute between Guyana and Suriname. ITLOS President, Dolliver Nelson, will serve as president of the arbitral tribunal and Kamal Hossain, Allan Phillip, Thomas Franck and Hans Smit as its members. The secretariat of the Permanent Court of Arbitration is acting as registry in this case. By agreement of the two Governments, both the written and oral proceedings in this arbitration are to be confidential.

48. The secretariat of the Permanent Court of Arbitration is acting as registry in an arbitration between Barbados and the Republic of Trinidad and Tobago relating to the delimitation of the EEZ and continental shelf between them, submitted under Part XV of UNCLOS to an arbitral tribunal constituted in accordance with UNCLOS, annex VII. The arbitral tribunal consists of: Stephen Schwebel (President), Ian Brownlie, Vaughan Lowe, Francisco Orrego Vicuña and Arthur Watts. By agreement of the two Governments, both the written and oral proceedings in this arbitration are to be confidential.

D. Deposit and due publicity

49. Between March and July 2004, four coastal States deposited charts or lists of geographical coordinates of points with the Secretary-General of the United Nations, as required by UNCLOS. On 12 March 2004, the United Kingdom of Great Britain and Northern Ireland deposited, with reference to article 75, paragraph 2, of UNCLOS, the list of geographical coordinates of points defining the outer limits of

a zone adjacent to the territorial sea of the British Indian Ocean Territory, known as the Environment (Protection and Preservation) Zone, established for that Territory by Proclamation No. 1 of 17 September 2003. On 19 April 2004, the Republic of Cyprus deposited, in accordance with article 75, paragraph 2, of UNCLOS, a nautical chart and the list of geographical coordinates of points, showing the median line as referred to in the agreement between the Republic of Cyprus and the Arab Republic of Egypt on the delimitation of the exclusive economic zone of 17 February 2003 and the list of geographical coordinates of points defining that line. On 11 May 2004, Brazil deposited with the Secretary-General, in accordance with article 16, paragraph 2, of UNCLOS, the list of geographical coordinates of points defining the straight baselines along the coast of Brazil. Finally, on 14 May 2004, Trinidad and Tobago deposited with the Secretary-General, in accordance with article 16, paragraph 2, and article 47, paragraph 9, of UNCLOS, a map showing its archipelagic baselines and territorial sea limits and the list of geographical coordinates of points defining its archipelagic baselines.

50. In connection with the deposit by the United Kingdom, the Secretary-General received communications from Mauritius, dated 14 April 2004. Mauritius protested United Kingdom Proclamation No. 1 of 17 September 2003, considering that, by depositing the list of coordinates defining the outer limits of the Environment (Protection and Preservation) Zone with the Secretary-General, the United Kingdom was purporting to exercise over that zone rights which only a coastal State may have over its EEZ. Mauritius reiterated that it did not recognize the "British Indian Ocean Territory" and reasserted its sovereignty over the Chagos Archipelago, including its maritime zones.

51. In relation to the deposit by Cyprus, it is recalled that Turkey had previously informed the Secretary-General in March 2004 that the delimitation of the EEZ or the continental shelf in the Eastern Mediterranean, especially in areas falling beyond the western part of longitude 32°16'18", also concerns Turkey's existing rights, emanating from the established principles of international law. In the opinion of Turkey, the delimitation of the EEZ and the continental shelf beyond the western parts of longitude 32°16'18" should be effected by agreement between the concerned States of the region, based on the principle of equity. For these reasons, Turkey stated that it did not recognize the agreement between Cyprus and Egypt on the delimitation of the exclusive economic zone of 17 February 2003 and reserved all its legal rights related to the delimitation of the maritime areas, including the seabed and subsoil and the superjacent waters to the west of longitude 32°16'18".

52. It should be noted that information regarding the deposits of charts and lists of geographical coordinates of points referred to in paragraph 51 above and also in paragraph 48 of the Secretary-General's report (A/59/62), as well as statements and declarations received in this regard, are contained or were published in the Law of the Sea Information Circulars (LOSICs) and in the Law of the Sea Bulletins.[16]

E. Access to and from the sea and freedom of transit

53. The issue of the right of access of landlocked States to and from the sea and of freedom of transit is regulated by Part X of UNCLOS.

54. On 18 June 2004, the eleventh session of the United Nations Conference on Trade and Development (UNCTAD) adopted the São Paulo Consensus, a

comprehensive policy document setting out the future objectives of UNCTAD (document TD/410). A number of provisions of that document deal with the special problems of landlocked developing countries, as well as the related special problems and challenges faced by transit developing countries. The document also outlines the goals of UNCTAD in addressing these problems, within a new global framework for transit transport cooperation for landlocked and transit developing countries in accordance with the Almaty Ministerial Declaration and the Almaty Programme of Action, particularly those relating to their inherent disadvantages and vulnerabilities. The goals of UNCTAD to "examine policy proposals and regulatory regimes relating to transport and trade facilitation" and to "provide technical assistance to developing countries, including landlocked and transit developing countries, ... to improve the availability and efficiency of infrastructure facilities to support trade" should make it easier for both landlocked States and transit States to build the legal framework containing the agreed terms and modalities, at the bilateral, subregional or regional level, for exercising freedom of transit.

55. Paragraph 57 of the main report (A/59/62) contains information concerning access to and from the sea by Bolivia. Chile, a transit country for Bolivia, considers that the matter is a bilateral issue which has been settled under the 1904 boundary treaty between Bolivia and Chile, which is in force.

IV. Developments relating to international shipping activities

56. UNCLOS balances the right of a flag State to exercise rights of navigation with its duty to exercise jurisdiction and control effectively in administrative, technical and social matters over ships flying its flag. It requires the flag State to take the necessary measures to ensure safety at sea with regard to the construction and manning of ships, labour conditions and the training of crews. Those measures must conform to generally accepted international regulations, procedures and practices, many of which have been developed by IMO and also by ILO with respect to labour conditions.

A. Safety of ships and labour conditions

57. *Ship construction*. The IMO Maritime Safety Committee (MSC) at its 78th session in May 2004 approved proposed amendments to chapter XII (Additional safety measures for bulk carriers) of the International Convention for the Safety of Life at Sea (SOLAS) with a view to their adoption at its session in December 2004. The amendments would replace the existing text of chapter XII with a new text incorporating revisions to some regulations and introduce new provisions relating to double-side skin construction for new bulk carriers of 150m in length and over as an optional alternative to single-side skin construction.

58. *Labour conditions*. The recommended draft for a consolidated maritime labour convention will be discussed at an ILO Preparatory Technical Maritime Conference in September 2004 prior to its consideration and scheduled adoption at the International Labour Conference in 2005. An outstanding issue is whether the preamble should, in addition to a reference to article 94 of UNCLOS, also include a clause providing that article 217 of UNCLOS establishes the enforcement obligations. The relevance of article 217 has been questioned because it relates to

flag State obligations for the prevention, reduction and control of pollution of the marine environment from vessels, rather than to social matters. Also under discussion in the context of the scope of application of the draft convention is the tonnage limit and whether to exclude oil rigs and drilling platforms and ships not engaged in international voyages. Different views have also been expressed on whether a Member State's obligation to enforce its laws with sufficient sanctions or other corrective actions to discourage violations should apply only to the flag State or rather wherever such violations occur.[17]

59. The consolidated maritime labour convention will not apply to fishing vessels and fishers. However, ILO is working on new legal instruments which would revise the existing ILO five conventions and two recommendations and apply broadly to workers in the fishing sector, including the self-employed and those paid on the basis of the share of the catch; have the flexibility to ensure wide-scale ratification and implementation; and include new provisions on safety and health to reduce the high rate of accidents and fatalities highlighted in earlier ILO reports. The new instruments would also include new provisions on compliance and enforcement, strengthening the role of both flag States and port States.[18]

60. Recent developments in IMO with respect to the working conditions of seafarers include the decision by the IMO Legal Committee (LEG) to mandate the Joint IMO/ILO Ad Hoc Expert Working Group on Liability and Compensation Regarding Claims for Death, Personal Injury and Abandonment of Seafarers to proceed with the development of longer-term sustainable solutions to address the problems of financial security with regard to compensation in the case of death and personal injury, on the understanding that the eventual solution should not in any way interfere, affect, erode or in any way whatsoever diminish any rights or remedies seafarers may enjoy in a particular State under an existing legal framework.[19]

61. Furthermore, in response to concerns expressed in IMO[20] and ILO[21] about the detention of seafarers serving on ships involved in accidents resulting in serious pollution of the marine environment, IMO decided to include in the work programme of LEG the development of guidelines on the fair treatment of seafarers, establishing a joint IMO/ILO working group therefor. Similar concerns have also been expressed in the Meeting of States Parties to UNCLOS.[22] LEG decided that the guidelines should not interfere with situations involving a charge of wilful misconduct, criminal negligence or other criminal activity. Some delegations suggested that the guidelines should be based not only on the principles of UNCLOS and relevant IMO instruments, but also on the fact that unwarranted detention constitutes a violation of human rights. It has been suggested that particular regard should be given to the provisions of UNCLOS with respect to monetary penalties and the need for the prompt release of seafarers once security, such as a bond, has been posted. In addition, mention should also be made of the opportunity to resort to dispute settlement mechanisms, such as ITLOS.[23]

B. Transport of dangerous goods

62. In the Strategy for the Further Implementation of the Programme of Action on the Sustainable Development of Small Island Developing States (Barbados Programme of Action),[24] adopted by the Alliance of Small Island States at the Inter-

Regional Preparatory Meeting for the Barbados Programme of Action, held in the Bahamas in January 2004, and endorsed and forwarded by the Group of 77 and China as a draft strategy to the Commission on Sustainable Development working as the preparatory meeting for the International Meeting to Review the Implementation of the Barbados Programme of Action,[25] growing concern has been expressed over the security and environmental implications of the disposal and transport of radioactive materials and the lack of adequate liability and compensation regimes. The draft strategy states that the transportation of radioactive materials in and through the regions of small island developing States must cease and that the ongoing dialogue, including through IMO, with the shipping States should be urgently strengthened towards that end. During the preparatory meeting for the International Meeting, the Group of 77 and China objected to proposals to delete the text, contending that it represented agreed language from the Barbados Programme of Action and that the objective of the International Meeting was not to renegotiate the Programme of Action.[26] Informal consultations will continue on this and other aspects of the draft strategy prior to the International Meeting to be held in January 2005.

63. In the Preparatory Committee for the 2005 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), States Parties emphasized that all transport of nuclear and radioactive material, including maritime transport, should be carried out in a safe and secure manner, in strict conformity with international standards established by the relevant international organizations, such as IAEA and IMO. Some States Parties called for effective liability arrangements, prior notification and consultation. States carrying out international transport stated that those transports were carried out in a safe and secure manner and in strict conformity with all relevant international standards. States Parties welcomed the conclusions on safety contained in IAEA General Conference resolution GC(47)/RES/7; the adoption by the IAEA Board of Governors and General Conference of the revised Code of Conduct on the Safety and Security of Radioactive Sources in September 2003; the outcome of the 2003 IAEA International Conference on the Safety of Transport of Radioactive Material; and the IAEA Plan of Action for the Safe Transport of Radioactive Material.[27]

64. The Plan of Action for the Safe Transport of Radioactive Material was approved by the IAEA Governing Board in March 2004.[28] It was prepared pursuant to the request in resolution GC(47)/RES/7.C to develop an action plan, in consultation with Member States, based on the results of the International Conference on the Safety of Transport of Radioactive Material (see A/58/65/Add.1, paras. 37-40) and within the Agency's competence. A separate action plan is being prepared on strengthening the international preparedness and response system for nuclear and radiological emergencies, pursuant to resolution GC(47)/RES/7.A.

65. The Action Plan for the Safe Transport of Radioactive Material sets out a number of measures the IAEA Secretariat plans to take in order to address the technical and other issues raised during the International Conference. On the issue of liability, the Secretariat is to keep Member States informed of the work of the Expert Group on International Nuclear Liability, which has been established by the Director General to assist IAEA in drafting explanatory texts on the nuclear liability instruments adopted under IAEA auspices; to identify and explore issues pertaining to the application and scope of the nuclear liability instruments adopted under IAEA auspices and more widely; and to consider the need to develop further the IAEA

nuclear liability regime, taking into account specific concerns of both nuclear and non-nuclear countries. The Group is to recommend measures to be taken to enhance adherence to an effective nuclear liability regime, including possible changes to fill any serious gaps.

66. Actions by the Secretariat to enhance communication comprise the holding of "a seminar in early 2005 to discuss the latest information on the complex technical issues involving the area of safety which relate to transport"; and the review of the current status of incorporation of transport events in the International Nuclear Event Scale (INES) Information System.[29] In addition, the Secretariat is to "take note of the importance placed by Member States on the maintenance of dialogue and consultation aimed at improving mutual understanding, confidence-building and enhanced communication in relation to safe maritime transport of radioactive material and their support for the recommendation of the Conference President that informal discussions should continue among shipping States and relevant coastal States on communication, with Agency involvement".

C. Safety of navigation

67. At its 78th session, the IMO Maritime Safety Committee (MSC) adopted three new and amended two existing traffic separation schemes, including associated routeing measures. It also adopted a new mandatory area to be avoided off the north-east coast of New Zealand; a new two-way route in the Great North-East channel of the Torres Strait off the north-east coast of Australia, and an area to be avoided in the Paracas National Reserve. Amendments were adopted by MSC to the existing mandatory ship reporting systems "In the Torres Strait and Inner Route of the Great Barrier Reef", off the north-east coast of Australia (resolution MSC.161(78)) and "Off Cape Finisterre" (resolution MSC.162(78)). Recent measures adopted or proposed to protect particularly sensitive sea areas (PSSAs) are reported on in paragraphs 106 to 110 of the present report.

D. Implementation and enforcement

68. Issues relating to flag State implementation were discussed at the fifth meeting of the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea (ICP), which adopted recommendations thereupon to the General Assembly for its consideration (see A/59/122, paras. 10, 31-42). The fifth meeting had before it the report of the Consultative Group on Flag State Implementation (A/59/63), as well as a submission by IMO on the strengthening of flag State implementation (A/AC.259/11).

69. At its 92nd session, in June 2004, the IMO Council considered the invitation in General Assembly resolutions 58/240 and 58/14 to IMO and other competent international organizations to study, examine and clarify the role of the "genuine link" in relation to the duty of flag States to exercise effective control over ships flying their flag, including fishing vessels. The Council endorsed the views expressed by the IMO Secretariat in its submission to ICP in connection with the question of the "genuine link". The Council instructed the Secretary-General of IMO to consult, as appropriate, with the Executive Heads of other interested organizations on how best to implement the invitation by the General Assembly and

to report to the Council on the outcome of his consultations. The Council, furthermore, invited member Governments to ensure that the interests of and the decisions made within IMO were brought to the attention of government representatives attending meetings of other international organizations and were consistently pursued.[30]

70. IMO has continued its work on the development of a voluntary IMO member State audit scheme. At its second session, the Joint Maritime Safety Committee (MSC)/Marine Environment Protection Committee (MEPC)/Technical Cooperation Committee (TCC) Working Group considered a draft framework for member State audits; draft procedures for member State audits; a draft member State audit standard; and a draft memorandum of understanding between member Governments to be audited and IMO. The Group agreed, in principle, that the draft code for the implementation of IMO instruments[31] should be the basis for the audit standard; and that further work was needed to ensure that the code fully met the requirements of the audit standard. While recognizing that it was premature to develop proposals on this issue, the Group accepted that there was a need for a body within IMO to monitor the implementation of the scheme with a view to providing strategic direction and its continued improvement. At its 92nd session, the Council agreed to consider the issue at the appropriate time. It also approved, in principle, the draft documentation developed thus far for use in the pilot audit project, aimed at identifying any problems with the process and providing appropriate feedback into the work on the further development of the scheme. The European Parliament has urged that the IMO audit scheme be made compulsory without delay and that its results be published.[32]

71. Lack of effective flag State control over ships flying their flag can pose a threat to the safety of navigation, to maritime security and to the marine environment. As it can also lead to overexploitation of marine living resources, MEPC at its 51st session decided to organize a second session of the Joint Working Group on IUU Fishing and related matters in order to stimulate further cooperation between FAO, IMO and regional fishery management organizations.[33]

72. In June 2004, the Organization for Economic Cooperation and Development (OECD) issued a report on "Maritime security — options to improve transparency in the ownership and control of ships".[34] The report states that all shipping registers are vulnerable to potential misuse by terrorists or criminal interests, but that open registers are inherently more vulnerable, especially those promoting the fact that they are committed to protecting the identity of beneficial owners. The report suggests that promoting the provision of confidentiality (as opposed to anonymity) may offer a workable compromise between security imperatives and commercial considerations. The measures proposed to increase transparency in the ownership and control of ships range from simple administrative actions to more far-reaching measures that would only be considered at times of serious and/or imminent threat. The report recommends that flag States avoid registering vessels whose owners go to extensive lengths to hide their identities, for instance by using complex corporate mechanisms. In the event that a register decides to accept such vessels, even though ownership details are uncertain, the report suggests that the vessels should be clearly identified as failing to meet transparency requirements, and that such details should be readily available to competent authorities.

73. The European Parliament has called on the Council and Commission to incorporate programmes to bolster maritime administrations into the Community's development policy. Furthermore, the European Parliament has called for the establishment of a European coastguard service equipped with the necessary powers to ensure: (i) maritime safety, the protection of the marine environment, including fisheries surveillance, and protection against terrorism, piracy and maritime crime; (ii) strict monitoring of adherence to certain shipping routes and prosecution in respect of the illegal entry of vessels; and (iii) the swiftest possible coordination of the necessary measures in the event of an accident at sea. The European Parliament reiterated that there was a need to revise international law so as to confer greater powers on coastal States to reinforce maritime safety in their EEZs and to improve the protection of the marine environment.[35]

E. Assistance to persons in distress at sea

74. UNCLOS requires both flag States and coastal States to act in order to enforce the duty to render assistance: the flag State, by requiring vessels flying its flag to assist any person in danger at sea or to rescue persons in distress; and the coastal State, by promoting the establishment, operation and maintenance of an adequate and effective search and rescue service.

75. On 20 May 2004, MSC adopted amendments to chapter V of SOLAS (resolution MSC.153(78)) and to chapters 2, 3 and 4 of the annex to the International Convention on Maritime Search and Rescue (SAR Convention) (resolution MSC.155(78)), as well as associated Guidelines on the Treatment of Persons Rescued at Sea (resolution MSC.167(78)). All three resolutions state that the amendments were intended to ensure that in every case a place of safety is provided within a reasonable time and that the responsibility for providing a place of safety or to ensure that a place of safety is provided falls on the party responsible for the SAR region in which the survivors were recovered. If accepted by member States, the amendments will for the first time place obligations on Parties to SOLAS and to the SAR Convention to cooperate to ensure that masters of ships providing assistance by embarking persons in distress at sea are released from their obligations with minimum further deviation from the ships' intended voyage, provided that releasing the master of the ships from these obligations does not further endanger the safety of life at sea. The party responsible for the search and rescue region in which such assistance is rendered must exercise primary responsibility for ensuring such cooperation occurs, so that survivors assisted are disembarked from the assisting ship and delivered to a place of safety, taking into account the particular circumstances of the case and the guidelines developed by the Organization. In these cases, the relevant party must arrange for such disembarkation to be effected as soon as reasonably practicable. The amendments to SOLAS and the SAR Convention are expected to enter into force on 1 July 2006.

76. The Guidelines on the Treatment of Persons Rescued at Sea are intended to help Governments and masters better understand their obligations under international law and to provide guidance with regard to carrying out these obligations. Shipmasters should understand and heed their obligations under international law to assist persons in distress at sea without regard to nationality or status of the persons in distress, or to the circumstances in which they are found. Rescue coordination centres should have effective plans of operation and

arrangements (inter-agency or international plans and agreements if appropriate) in place for responding to all types of search and rescue situations.

77. Since the adoption of the amendments to SOLAS and SAR and the associated guidelines, IMO has established an International SAR Fund to support the establishment and continued maintenance of regional maritime rescue coordination centres and maritime rescue sub-centres along the African coastline.[36] It also adopted amendments to two standards in the Convention on Facilitation of International Maritime Traffic (FAL) in order to incorporate a reference to persons rescued at sea. The majority of delegations at the 31st session of the Facilitation Committee (July 2004) agreed to redraft section 2, subsection H of the Convention on Facilitation of International Maritime Traffic (FAL Convention) to require public authorities to seek the cooperation of shipowners to ensure that, when ships intend to call at ports for the sole purpose of putting ashore persons rescued at sea, the master will give public authorities as much notice as possible of that intention, with the fullest possible details of the identity of the persons. Section 7, subsection C on emergency assistance has been redrafted to require public authorities to facilitate the arrival and departure of ships engaged in rescue of persons in distress at sea in order to provide a place of safety for such persons, designed to enhance maritime safety and the safety of life at sea.[37]

78. Finally, in response to the request of MSC[38] for the Secretary-General to take appropriate action in further pursuing his inter-agency initiative, in particular with respect to procedures to assist in the provision of places of safety for persons in distress at sea, a second session of the inter-agency meeting on the treatment of persons rescued at sea was held on 2 July 2004 at IMO Headquarters. The meeting was attended by representatives of IMO, the Office of the United Nations High Commissioner for Refugees (UNHCR), the Office of the United Nations High Commissioner for Human Rights, the Division for Ocean Affairs and the Law of the Sea and the International Organization for Migration. The United Nations Office on Drugs and Crime (UNODC) requested the Division for Ocean Affairs and the Law of the Sea to represent it. The inter-agency meeting reaffirmed the need for the development of a common approach at the inter-agency level and considered that the inter-agency meetings were a major step forward in establishing a coordinating mechanism to respond in a coherent and consistent manner to future emergencies. The incident involving the German flagged ship *Cap Anamur*[39] was cited as a case in point.

79. The inter-agency group decided to develop supplementary guidance with a view to facilitating the post-rescue phase and further assist the master and shipowners and contracting Governments to disembark the persons rescued, whether they are asylum-seekers, refugees or undocumented migrants, with the least disruption. Such guidance would comprise a brief guide as to which organizations to contact, their respective major responsibilities and other relevant general advice.

V. Crimes at sea

80. The prevention and suppression of criminal activities at sea requires the cooperation of all States. Some crimes, such as piracy and illicit traffic in narcotic drugs or psychotropic substances, are specifically addressed in UNCLOS. The Convention grants States universal jurisdiction to repress piracy on the high seas

and in the EEZ and requires States to cooperate in the suppression of illicit traffic in narcotic drugs or psychotropic substances. Apart from UNCLOS, a number of other international instruments provide the legal basis for the suppression of criminal activities, such as smuggling of migrants, illicit traffic in narcotic drugs or psychotropic substances and hijacking.

A. Prevention and suppression of acts of terrorism

81. The International Ship and Port Facility Security (ISPS) Code and related amendments to SOLAS entered into force on 1 July 2004. According to figures given to IMO by member Governments, more than 86 per cent of ships and 69 per cent of port facilities had their security plans approved by 1 July and the figures are rising. Ships must be able to present, on demand, to port State control officers an international ship security certificate providing evidence that the ship conforms to the new security requirements. A coastal State may require a ship intending to enter its ports to notify in advance whether it complies with the requirements. The Secretary-General of IMO has noted that if there had not been some administrative bottlenecks the number of issued international ship security certificates would have been higher than the reported 56 per cent as of 1 July.[40]

82. At its 92nd session, the IMO Council supported the Secretary-General's initiative to identify shipping lanes of strategic importance and significance which might be vulnerable to terrorist attacks and to work with all parties concerned to ensure that they are kept open under all circumstances, allowing the uninterrupted flow of traffic.[41]

83. Maritime security concerns also underlie the proposed amendments to the Convention for the Suppression of Unlawful Acts against the Safety of Maritime Navigation (SUA Convention) and to the Protocol for the Suppression of Unlawful Acts against the Safety of Fixed Platforms Located on the Continental Shelf (the 1988 Protocol). At its 88th session in April 2004, LEG continued its consideration of the scope of the proposed new offences for inclusion in the SUA Convention and the 1988 Protocol, as well as the proposed new boarding provisions. The inclusion of provisions concerning boarding was generally accepted, but it was pointed out that the principle of flag State jurisdiction had to be respected to the utmost and that a boarding by another State on the high seas could only take place in exceptional circumstances. Several delegations expressed the view that the provisions relating to compensation for unjustified boarding required strengthening.[42]

84. Discussions on the proposed new offences during the intersessional meeting of the LEG Working Group on the review of the SUA Convention and its 1988 Protocol in July 2004 focused mainly on the proposed criminalization of the maritime transport of weapons of mass destruction, their means of delivery and related materials. The relevance of Security Council resolution 1540 (2004) of 29 April 2004, described in paragraph 88 was noted in that regard. The majority of delegations supported the inclusion of the transport of nuclear, chemical and biological weapons among the list of offences, although some said it was essential to link the offences to a terrorist motive. Views differed as to whether the transport of dual-use equipment, materials, software or related technology should be included.[43]

B. Illicit traffic in weapons of mass destruction, their means of delivery and related materials

85. Illicit traffic in weapons of mass destruction, their means of delivery and related materials, is of concern to the international community, in particular as it relates to nuclear material. As of December 2003, the IAEA Illicit Trafficking Database contains 540 confirmed incidents involving illicit trafficking in nuclear and other radioactive materials. Another 344 incidents that have been reported in open sources, but have not been confirmed by States, are also tracked in the IAEA database but are not included in the statistics.[44]

86. In resolution 1540 (2004), the Security Council, acting under Chapter VII of the Charter of the United Nations, required all States to take and enforce effective measures to establish domestic controls to prevent the proliferation of nuclear, chemical or biological weapons and their means of delivery[45] and to that end to "develop and maintain appropriate effective border controls and law enforcement efforts to detect, deter, prevent and combat, including through international cooperation when necessary, the illicit trafficking and brokering in such items in accordance with their national legal authorities and legislation and consistent with international law" and to "establish, develop, review and maintain appropriate effective national export and trans-shipment controls over such items, including appropriate laws and regulations to control export, transit, trans-shipment and re-export ... and transporting that would contribute to proliferation".[46] The Council furthermore called upon all States "in accordance with their national legal authorities and legislation and consistent with international law to take cooperative action to prevent illicit trafficking in nuclear, chemical or biological weapons, their means of delivery, and related materials".[47]

87. At a meeting held on 31 May and 1 June 2004 to commemorate the first anniversary of the Proliferation Security Initiative, the participants stressed that the Initiative was an important element in responding to the growing challenge posed by the proliferation of weapons of mass destruction, their delivery systems and related materials worldwide and that it had to be consistent with national and international law. The Proliferation Security Initiative was said to be consistent with Security Council resolution 1540 (2004). It was emphasized that the Initiative relied on the widest possible cooperation between States around the world.[48] The United States concluded bilateral ship boarding agreements with Liberia[49] and Panama[50] in February and May 2004, respectively.

C. Piracy and armed robbery at sea

88. There was an 18 per cent increase in the number of reported acts of piracy and armed robbery in 2003 over the figure for 2002. The number of reported actual or attempted acts increased from 140 to 152 in the South China Sea; from 66 to 96 in the Indian Ocean; from 67 to 72 in South America and the Caribbean; from 47 to 67 in West Africa; and from 34 to 38 in the Malacca Strait. In the Mediterranean Sea the number of incidents decreased from 3 to 1 and in East Africa from 24 to 22, compared with 2002 figures. The level of violence remains high. During 2003, 13 crew members were reportedly killed, including two passengers and six military personnel, 45 persons were wounded and 54 crew members went missing. In

addition, 11 ships were hijacked, 11 went missing, one ship was set ablaze and another was run aground.

89. While the number of piracy attacks reported to the International Maritime Bureau of the International Chamber of Commerce in the first six months of 2004 decreased to 182, compared with 234 during the corresponding period in 2003, the number of persons killed rose to 30, compared to 16 during the corresponding period in 2003, and eight ships were hijacked. Indonesia recorded 50 incidents and in the Strait of Malacca incidents increased to 20 from 15 in 2003. Attacks in the Strait of Singapore have started again; there have been seven incidents in 2004.

90. At its 78th session, MSC observed that piracy and armed robbery continued to trouble the shipping industry, although emphasis had been placed on maritime security after the 11 September 2001 attacks. The Committee noted that while the implementation of SOLAS chapter XI.2 and the ISPS Code was expected to have a positive impact on reducing the number of piracy and armed robbery incidents, Governments should be aware that continued activities of that nature would raise serious concerns as to compliance by the ports and port facilities of the country concerned with the new maritime security regime. The Committee, therefore, once again urged all Governments and the industry to intensify and coordinate their efforts to eradicate these unlawful acts.[51]

91. IMO has been promoting the conclusion of regional agreements/memorandums of understanding on the prevention and suppression of piracy and armed robbery in the context of the regional meetings it has convened as part of its anti-piracy project.[52] In addition, Japan has taken the initiative of developing a Regional Cooperation Agreement on Anti-Piracy in Asia in close cooperation with 15 other States in the Asian region. The text of the Agreement was almost finalized in November 2003 and is waiting for formal adoption after completion of the required procedures. The increase in the number of acts of piracy and armed robbery in the Strait of Malacca and fears of possible attacks by terrorists have underlined the need for urgent action and led to an agreement by Indonesia, Malaysia and Singapore to coordinate naval patrols in the Strait of Malacca to combat piracy and the threat of terrorist attacks on cargo ships. It has been reported that the patrols will be carried out year-round by a task force composed of forces from each country operating under their national commands.[53]

D. Smuggling of migrants, trafficking in persons and stowaways

92. The Protocol against the Smuggling of Migrants by Land, Sea and Air, supplementing the United Nations Convention against Transnational Organized Crime entered into force on 28 January 2004. A legislative guide for the implementation of the Protocol has been prepared by UNODC together with legislative guides for the implementation of the United Nations Convention against Transnational Organized Crime, the Protocol to Prevent, Suppress and Punish Trafficking in Persons, Especially Women and Children and the Protocol against the Illicit Manufacturing of and Trafficking in Firearms, Their Parts and Components and Ammunition.

93. The first session of the Conference of the Parties to the United Nations Convention against Transnational Organized Crime (28 June-9 July 2004) approved three themes for discussion at its next session, in 2005: the basic adaptation of

national legislation in accordance with the Convention and its Protocols; criminalization legislation and difficulties encountered in implementation of the instruments; and international cooperation and technical assistance to overcome difficulties identified in implementing the Convention and its Protocols. Additional themes adopted specifically for the Protocol against trafficking in persons and for the migrants Protocol are respectively: the protection of victims and preventive measures, and the implementation of articles 15 and 16 of the migrants Protocol concerning preventive, protection and assistance measures. UNODC has been requested to submit to the Conference of the Parties at its second session an analytical report based on the responses it receives from States parties and signatories to a questionnaire. It has also been requested to provide in-depth information on technical assistance possibilities and to study relevant precedents for technical cooperation activities (including the financial aspect).[54]

94. The problem of stowaways continues to impose a heavy burden on ships and crews and on the shipping industry as a whole. The total number of stowaway incidents reported to IMO from November 1998 to June 2004 was 2,342. The most affected areas are West Africa (33.6 per cent in 2002 and 47.8 per cent in 2003) and the Mediterranean, the Black Sea and the North Sea (47.7 per cent in 2002 and 24.3 per cent in 2003). IMO expects that the implementation of the recent amendments to the annex to the FAL Convention, together with the introduction of the security measures prescribed by the ISPS Code, would have a positive impact on the reduction in the number of stowaway cases. At the 31st session of the Facilitation Committee (FAL 31), the observer from the Baltic and International Maritime Council said that there were some coastal States that still today flatly refused to allow the disembarkation of stowaways under any circumstances, even where stowaways were in possession of valid travel documents and all necessary arrangements had been made for the stowaways' timely repatriation.[55]

E. Illicit traffic in narcotic drugs and psychotropic substances

95. During the 47th session of the Commission on Narcotic Drugs in March 2004, several representatives made references to increased problems involving illicit drug trafficking by sea, to the critical role of international cooperation and to successes facilitated by bilateral and regional agreements and arrangements, in particular regarding law enforcement cooperation. The Commission was informed that, pursuant to its resolution 46/3 on enhancing international cooperation in combating drug trafficking by sea, Japan was hosting a maritime law enforcement seminar in October 2004. The seminar would make use of the maritime drug law enforcement training guide developed by UNODC and would bring together experts in the field.[56] UNODC recently issued a practical guide for competent authorities under article 17 of the United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances.

96. FAL 31 agreed that since the Guidelines for the Prevention and Suppression of Smuggling of Drugs, Psychotropic Substances and Precursor Chemicals on Ships engaged in International Maritime Traffic (IMO Assembly resolution A.872(20)) contain various ship security-related aspects, which might not be totally in conformity with the provisions of the ISPS Code, the suitability of the Guidelines, for further use, might be questioned. There was therefore an urgent need to revise and amend the Guidelines so as to align them with the provisions of the Code and

thus maintain their continued relevance and usefulness. The revisions are to be completed in advance of the 24th session of the IMO Assembly in 2005.[57]

VI. Protection and preservation of the marine environment

A. Global

1. Land-based activities

97. At the global level, the degradation of coastal and marine environments not only continues but has intensified. Land-based sources are responsible for approximately 80 per cent of the pollution of the oceans and affect the most productive areas of the marine environment. Sewage remains the largest source of contamination, by volume, as coastal sewage discharges have increased dramatically in the past three decades. In particular, the provision of basic sanitation, as well as urban sewer systems and sewage treatment, in the developing world has not kept pace with rates of urbanization or improved services in many developed countries. Other serious land-based threats to the oceans include persistent organic pollutants (POPs), many of which are transported globally via the atmosphere, non-biodegradable litter and changes to natural sediment loads in rivers. This has significant negative implications of global magnitude for human health, poverty alleviation, food security and safety, and for affected industries.[58]

98. Nitrogen overload is also contributing to the rapid growth of oxygen-starved zones in some coastal waters. In recent decades, in fact, large areas of coastal waters with harmful algal blooms, severely depleted oxygen levels and disappearing seagrass beds have been identified and clearly linked with increased inputs of nitrogen coming from agricultural run-off, nitrogen compounds from fossil-fuel burning being deposited from the air, and discharges of human wastes. Severe oxygen depletion of coastal waters has significant negative consequences for economically important fisheries, ecosystem services and biodiversity.[59]

99. UNCLOS requires States to adopt laws and regulations to prevent, reduce and control pollution of the marine environment from land-based sources and to endeavour to establish, acting through the competent international organization or diplomatic conference, global and regional rules, standards and recommended practices and procedures, taking into account regional characteristics. The Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA)[60] was adopted in 1995 in order to protect the marine environment from land-based activities by assisting States in taking action individually or jointly within their respective policies, priorities and resources, leading to the prevention, reduction, control and/or elimination of the degradation of the marine environment, as well as to its recovery from the impact of land-based activities.

100. In 2004 the UNEP/GPA Coordination Office continued to implement the UNEP/WHO/UN-HABITAT/World Supply and Sanitation Collaborative Council (WSSCC) Strategic Action Plan on Municipal Wastewater, adopted at the UNEP/GPA Intergovernmental Review Meeting held in Montreal, Canada, in 2001. In particular, in February 2004 the Guidelines on Municipal Wastewater Management were issued, including the Ten Keys for Local and National Action on Municipal Wastewater Management.[61] In addition, a training manual on wastewater

management in coastal cities has been developed through the Train-Sea-Coast Programme (see para. 150).

101. The linkage between the principles and practices of integrated water resource management and integrated coastal zone management, including the need for an ecosystem approach to integrated water resource management and consideration of coastal zones as an integral part of freshwater management, were discussed at both the eighth special session of the UNEP Governing Council/Global Ministerial Environment Forum (29-31 March 2004)[62] and the twelfth session of the Commission on Sustainable Development (14-30 April 2004).[63] In this context, it was recognized that an essential step forward would be to urgently improve wastewater management, including both freshwater and marine ecosystems, to protect health and the environment, particularly in developing countries. These issues will be further discussed at the twenty-third session of the UNEP Governing Council.

102. With the support of the Government of Australia, the UNEP/GPA Coordination Office hosted the Global H_2O: Hilltops-2-Oceans Partnership Conference in Cairns, Australia, from 10 to 14 May 2004. Emphasizing the link between watersheds, river systems, coastal estuaries and the marine environment, the Conference highlighted the interdependence of the respective stakeholders in these environments and the critical need to strengthen cooperation between freshwater, coastal and oceans institutions.

103. Recognizing that the national programmes of action for the protection of the marine environment from land-based activities (NPAs) provide an effective tool and policy framework for integrated government action to protect water resources from the hilltops to the oceans, the Conference facilitated the sharing of experience in the development of NPAs in order to assist UNEP in realizing the target of 40 NPAs by 2006.[64] The Conference also focused on the possible use of wastewater emission targets (WET) as they refer to sanitation and, in this context, it launched a partnership between UNEP and the Water Supply and Sanitation Collaborative Council (WSSCC), linking the WET initiative with the Water, Sanitation and Hygiene for All campaign (WASH), to ensure that the World Summit on Social Development targets on water and sanitation include all aspects, in particular hygiene awareness and the safe discharge and re-use of wastewater. Numerous other new partnerships emerged from the Conference, as an indication of the importance of fostering collaboration between all relevant stakeholders.[65]

2. Pollution from ships

104. *MARPOL annexes*. Revised annex IV to the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78) containing regulations for the prevention of pollution by sewage from ships was formally adopted by MEPC in resolution MEPC.115(51) on 1 April 2004 at its 51st session and is expected to enter into force on 1 August 2005.[66] The revised annex will apply to new ships engaged in international voyages which are of 400 gross tonnage and above or which are certified to carry more than 15 persons. Existing ships will be required to comply with the provisions of revised annex IV five years after the date of its entry into force. The annex requires ships to be equipped with either a sewage treatment plant or a sewage comminuting and disinfecting system or a sewage holding tank. The

discharge of sewage into the sea will be prohibited, except when the ship has in operation an approved sewage treatment plant and is discharging comminuted and disinfected sewage using an approved system at a distance of more than three nautical miles from the nearest land; or is discharging sewage which is not comminuted or disinfected at a distance of more than 12 nautical miles from the nearest land.

105. Other recent developments relating to the MARPOL annexes include the adoption by resolution MEPC.116(51) of amendments to annex V relating to the recording of the disposal of cargo residues in the Garbage Record Book,[67] and the approval of the revised texts of annexes I and II with a view to their adoption in October 2004.

106. *Particularly sensitive sea areas*. The western coasts of certain West European countries and the English Channel and its approaches[68] and also the Torres Strait region (as an extension of the Great Barrier Reef PSSA) were designated as PSSAs in principle at MEPC 49, subject to the approval of associated protective measures. At its 50th session, in July 2004, the Sub-Committee on Safety of Navigation (NAV) endorsed the establishment of a new 48-hour mandatory ship reporting system for every oil tanker of more than 600 tons deadweight carrying a cargo of heavy crude oil, heavy fuel oils or bitumen and tar and their emulsions entering the Western European Waters PSSA. A draft resolution to that effect has been prepared for adoption by MSC in December 2004.[69]

107. Australia had proposed extending the compulsory pilotage arrangements as the associated protective measure in the Torres Strait. In approving the Torres Strait region as a PSSA in principle, MEPC 49 had noted that, consistent with article 236 of UNCLOS, the proposed associated protective measure would not apply to vessels entitled to sovereign immunity. At NAV, Australia explained that the whole area within which pilots would be required was located within its territorial waters and that compulsory pilotage would reduce the risk of shipping incidents by some 35 per cent. The proposal was supported by several delegations. However, several other delegations considered that compulsory pilotage in a strait used for international navigation could not be allowed as it violated article 38 of UNCLOS, which provides that ships and aircraft of all nations enjoy the right of transit passage through straits used for international navigation, which shall not be impeded. In their view, there was no precedent for IMO to approve compulsory pilotage in international straits, neither was there any legal basis in any IMO convention to do so. NAV invited MEPC 52 to refer the legal issues to LEG 89 in order to enable MSC to consider the proposal with the legal issue resolved at its session in December 2004.[70] NAV also requested MSC to consider whether it was necessary to provide for compulsory pilotage through an amendment to chapter V of SOLAS and any other relevant instruments, including guidelines and criteria in order to enhance safety of navigation on the high seas and in straits used for international navigation.[71]

108. The European Parliament has also called for compulsory pilotage arrangements, in particular for oil tankers, in "special zones within environmentally sensitive and navigationally difficult areas of the Baltic Sea, particularly the Kadet Trench, the Skagerrak/Kattegat, the Great Belt and the Sound" and called on the Commission and the Member States to initiate the necessary measures in the competent international bodies, in particular IMO.[72]

109. The designation of the "Baltic Sea area, except Russian waters", the Canary Islands (Spain) and the Galapagos Archipelago (Ecuador) as PSSAs was approved in principle at MEPC 51. Proposed associated protective measures will be submitted to NAV by the countries concerned in 2005.[73]

110. Having considered proposals from some States and the shipping industry to undertake a review of the PSSA Guidelines (IMO Assembly resolution A.927(22)),[74] the majority of delegations at MEPC 51 agreed, in principle, to do so, provided that specific proposals were submitted at a future session of the Committee. In the interim, work on PSSAs approved in principle, but not yet designated, could continue, while both current and future applications to the Committee could be assessed in accordance with resolution A.927(22) until the review had been completed.

3. Climate change

111. *Greenhouse gas emissions from ships.* In December 2003, at its 23rd session, the IMO Assembly adopted resolution A.963(23) on IMO policies and practices related to the reduction of greenhouse gas emissions from ships. Certain paragraphs from the original draft were omitted, because Brazil, China and India were concerned that the draft resolution did not make a distinction between countries listed in annex I to the United Nations Framework Convention on Climate Change (UNFCCC), as referred to in article 2.2 of the Kyoto Protocol thereto, and those that were not (developing countries). Under the Kyoto Protocol (art. 2.2), only countries in annex I to UNFCCC have an obligation to reduce or eliminate the emission of greenhouse gases. Furthermore, the IMO draft resolution referred to voluntary measures, not obligations, which might encourage countries to renege on their commitments under the Kyoto Protocol. The paragraphs of the original draft on which consensus could not be reached were referred by the Assembly to MEPC for further consideration. Following an exchange of views, MEPC 51 decided to postpone further consideration of the issue until MEPC 52.

112. *The effect of carbon dioxide (CO_2) on the oceans.* Data drawn from three major research programmes — the World Ocean Circulation Experiment, the Joint Global Flux Study and the Ocean-Atmospheric Carbon Exchange Study by the National Oceanic and Atmospheric Administration have shown that humans have used about one third of the potential of the world's oceans to absorb the greenhouse gas carbon dioxide generated by human activities, such as burning coal for electricity and gasoline transportation. This first comprehensive study of ocean storage of carbon dioxide derived from human activities, anthropogenic CO_2, determined that the oceans took up some 118 billion metric tons of this carbon dioxide between 1800 and 1994.[75]

113. According to the study, CO_2 levels today are reaching 380 parts per million in the atmosphere. In contrast CO_2 concentrations remained between 200 and 280 parts per million before the industrial revolution in the 1800s. There are two large reservoirs that are capable of taking significant amounts of CO_2 out of the atmosphere: the ocean and land plants. Studies over the past decade have indicated that land plants are taking up CO_2 at rates comparable to the oceans, but scientists have determined that, over a 200-year time frame, land plants have released more of the gas to the atmosphere than they have taken up. This means that the ocean has been the only reservoir to consistently remove anthropogenic CO_2 from the

atmosphere. According to the study, the uptake of anthropogenic CO_2 by the oceans changes their chemistry and potentially can have a significant impact on the biological systems in the upper oceans.

114. An issue that is raising particular concern is the absorption of CO_2 by the oceans. The Intergovernmental Oceanographic Commission (IOC) of UNESCO and the Committee on Oceanic Research of the International Council for Science organized a symposium, "The ocean in a high-CO_2 world" (Paris, May 2004), to discuss the issue. The meeting expressed concern that the level of absorption of CO_2 by oceans (i.e. approximately one third of the CO_2 added to the atmosphere by human activities each year) is increasing the acidity of the oceans. The meeting underlined the need for more investigation and identified research priorities in order to increase understanding of the consequences and to allow for more informed policy decisions in this area.[76]

4. **Waste management**

115. *London Convention*. The twenty-seventh meeting of the London Convention Scientific Group was convened in Mombasa, Kenya, from 3 to 7 May 2004. The agenda for the Scientific Group meeting included the review of reports on dumping permits issued; advice on technical and scientific aspects of placement activities, where it was noted that placement should not be contrary to the aims of the London Convention; the consideration of the Guidelines for the Sampling and Analysis of Dredged Material for Disposal at Sea, which will be submitted to the twenty-sixth Consultative Meeting of the London Convention for adoption; and the monitoring of the marine environment, where the meeting considered options for making a substantive contribution to the Global Marine Assessment (GMA) process.

116. The meeting was preceded by the IMO/UNEP/New Programme for Africa's Development (NEPAD) Workshop on Marine Pollution Prevention and Environmental Management in Ports in Eastern Africa, convened from 26 to 30 April 2004. The workshop was sponsored by contracting parties to the London Convention, IMO, UNEP and the Ministry of Transport and Communication in Kenya and organized under the London Convention Technical Co-operation and Assistance Programme, in collaboration with the Coastal and Marine Secretariat of NEPAD. The workshop discussed regional issues, such as the management of garbage and land-based sources of marine pollution, dumping, discharges from ships (e.g. ballast water), lack of capacity and coordination. Another cause of concern was the limited capacity of countries in the region to ratify or implement international conventions.

117. *Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (the Basel Convention)*. In July 2004, the Secretariat of the Basel Convention and the Secretariat of the 1983 Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (the Cartagena Convention) signed a memorandum of understanding for the joint protection of the marine environment in the wider Caribbean. The main area of cooperation is the environmentally sound management of hazardous wastes in order to prevent coastal and marine pollution. Both entities will share expertise to build their mutual capacities; they will raise awareness on hazardous waste and marine pollution; and support each other in technical and legal training.[77]

5. Ship recycling[78]

118. *IMO*. At MEPC 51, a substantial number of delegations expressed the view that until sufficient experience had been gained from the implementation of the IMO Guidelines on Ship Recycling, the Committee should refrain from considering the possibility of making them mandatory. MEPC invited the ship recycling and shipping industry and other stakeholders to submit to the Committee any information on the practical implementation of the provisions of the Guidelines with regard to the identification of potentially hazardous materials on board ships and the preparation of the relevant inventory. A Correspondence Group was established to work on implementation issues relating to the Guidelines, including development of a ship recycling plan and a set of criteria for ships to be declared "ready for recycling".[79]

119. Having considered the report of the joint meeting between the secretariats of IMO, ILO and the Basel Convention,[80] the Committee agreed to the establishment of a Joint ILO/IMO/Basel Convention Working Group. The Group will undertake a comprehensive initial examination of the Guidelines adopted by the three organizations (see A/59/62, paras. 191-194) with a view to identifying any possible gap, overlap or ambiguity and consider mechanisms to jointly promote the implementation of the relevant Guidelines.[81] It was agreed that five States would be appointed from each organization to participate in the Working Group, with the understanding that representatives of other member States and intergovernmental or non-governmental organizations may attend and participate as observers.

120. *Basel Convention*. The third meeting of the Open-ended Working Group of the Basel Convention (OEWG), held in April 2004, continued to deal with the issue of ship dismantling. It adopted a work programme for the intersessional working group created by decision II/4 of 2003, setting out a process by which recommendations could be formulated in respect of the legal aspects of the full and partial dismantling of ships. According to this work programme, the intersessional working group, whose mandate was extended until the seventh Conference of the Parties to the Basel Convention (COP 7), would analyse topics such as the role of States, the duty to re-import and notification procedures, with a view to facilitating the formulation of recommendations by OEWG for COP 7. OEWG did not reach consensus on certain terms to be submitted for consideration by COP 7 that related to possible obligations of flag States, States of export, States of import and other States.[82]

121. With respect to the Joint IMO/ILO/Basel Convention Working Group, OEWG agreed to its terms of reference, as amended by MEPC 51, and on working arrangements. OEWG emphasized the need for the Joint Working Group to devise specific environmentally sound solutions for the dismantling of ships.

B. Regional

122. *UNEP Regional Seas Programme*. During the first half of 2004, the Regional Seas Programme coordinating office developed a document entitled "Regional seas strategic directions for 2004-2007 — a global initiative for regional seas cooperation", which sets out strategic guidelines, as agreed at the 5th Global Meeting of Regional Seas.[83] Regarding the various regional seas, UNEP signed a memorandum of understanding with the Regional Organization for the Conservation of the Environment of the Red Sea and the Gulf of Aden (PERSGA) to revise and

update the Regional Programme of Action for the Protection of the Marine Environment from Land-based Activities in the Red Sea and Gulf of Aden. The Nairobi Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region, held its 4th Meeting of the Conference of the Parties in July 2004, at which a US$ 11.43 million project funded by Norway and the Global Environment Facility (GEF) entitled "Addressing land-based activities in the Western Indian Ocean region (WIO-LaB)" was launched. The project will help the eight participating countries to develop action plans to curb sewage, chemicals and other land-based pollutants in the region's rivers and coastal waters. Within the framework of the Northwest Pacific Action Plan, a meeting was held concerning marine environmental emergency preparedness and response, at which progress in regional cooperation on marine pollution and preparedness was discussed.

123. *Commission for the Protection of the Marine Environment of the North-East Atlantic (OSPAR).* The Commission met in Reykjavik from 28 June to 1 July 2004. Members reviewed the issues resulting from the 2003 Joint Helsinki Commission-OSPAR Ministerial Meeting not covered by the OSPAR work programmes, and decided whether collective action was needed on each issue. The meeting agreed on adjustments to the initial OSPAR list of threatened and/or declining species and habitats; discussed marine protected areas, noting that no proposals in this regard had yet been submitted by the contracting parties; and decided to send letters to a number of fisheries management authorities to welcome the actions that were being taken to protect cold-water coral reefs within national fisheries zones, reiterating the importance of these reefs for marine biodiversity and the need for further protective measures. It also discussed problems related to radioactive and hazardous substances, eutrophication, the offshore industry, the European Marine Strategy and carbon dioxide placement. As regards offshore activities, the meeting invited the OSPAR Offshore Industry Committee to consider the need for OSPAR to further assess undersea noise from offshore activities. Regarding CO_2 sequestration, a rather complex issue considering that it had not arisen at the time when the Convention for the Protection of the Marine Environment of the North-East Baltic was negotiated, the meeting agreed on terms of reference for a workshop on the environmental impact of placement of CO_2 in geological structures in the OSPAR maritime area and assigned the issue of CO_2 placement to its Biodiversity Committee.

124. *Baltic Marine Environment Protection Commission (HELCOM).* The 25th meeting of the Helsinki Commission (Helsinki, 2-3 March 2004) adopted the following salient recommendations: recommendation 25/4 on measures aimed at the reduction of discharges from fresh water and marine fish farming, which sets stringent requirements for nutrient discharges; recommendation 25/5 on assessment of the need for escort towing in tanker transport routes to prevent accidents in the Baltic Sea area; recommendation 25/6 on new oil filtering technologies on board ships; and recommendation 25/7 introducing guidelines for the safety of winter navigation in the Baltic Sea.

125. The HELCOM Heads of Delegations held their 15th Meeting in June 2004. The meeting adopted decisions on a number of issues, including the establishment of an ad hoc working group to analyse the issue of environmental impact assessment in a transboundary context; the conservation and management of Baltic Sea seal populations; and the environmental impact of fisheries and eutrophication.

126. On 1 July 2004 new amendments to annex IV to the Helsinki Convention on sewage discharge from ships entered into force. The amendments, which change the distance from shore for sewage discharges and require some ships to have a sewage retention system in order to be able to deliver sewage to the reception facilities in ports, have been designed to harmonize the Baltic Sea regime with the provisions of the revised annex IV to MARPOL 73/78.

127. *Arctic*. In May 2004 senior Arctic officials met in Selfoss, Iceland. The Arctic Council working groups updated the meeting about new developments in their areas of work. The Arctic Monitoring and Assessment Programme (AMAP) continued its work on the Arctic Climate Impact Assessment overview report. The Conservation of Arctic Flora and Fauna working group asked the meeting to endorse the Circumpolar Biodiversity Monitoring Program (CBMP), which relates to the conservation and management of Arctic biodiversity and the sustainable use of its resources. CBMP makes available existing data and research related to biodiversity monitoring to decision makers in the Arctic Council member States and other stakeholders, and facilitates analysis, thus making possible informed decision-making. Lastly, the Protection of the Arctic Marine Environment working group continued its work on the Arctic Marine Strategic Plan and submitted new Arctic Waters Oil Transfer Guidelines to the meeting for consideration.

128. *Antarctic*. Parties to the Antarctic Treaty met in Cape Town, South Africa, from 24 May to 4 June 2004, for their XXVII Consultative Meeting. At the time of writing, the report of the meeting has not yet been published.

VII. Marine science and technology

129. IOC is an entity with competence in the field of marine scientific research. To respond to the requirements deriving from UNCLOS relevant to this research, transfer of marine technology and capacity-building, the IOC Assembly established in 1999 an Advisory Body of Experts on the Law of the Sea (ABE-LOS) to provide advice to the governing bodies of the IOC and to the Executive Secretary on the implementation of IOC responsibilities under UNCLOS.[84] ABE-LOS has held four meetings so far. The fourth meeting (ABE-LOS IV) took place in Lefkada, Greece from 4 to 7 May 2004.

130. ABE-LOS IV continued discussions begun at ABE-LOS III on the following issues: (i) the possible establishment of an IOC internal procedure related to the effective use of article 247 of UNCLOS on marine scientific research projects undertaken by or under the auspices of international organizations; (ii) the results of the revised IOC questionnaire on the practices of States in the field of marine scientific research and transfer of marine technology and (iii) the legal framework within the context of UNCLOS applicable to the collection of oceanographic data. Open-ended working groups were established on each of the above-mentioned topics to work by electronic mail and in close cooperation with the Division for Ocean Affairs and the Law of the Sea.

131. ***Possible establishment of an IOC internal procedure related to the effective use of article 247 of UNCLOS on marine scientific research projects undertaken by or under the auspices of international organizations.*** ABE-LOS III had recommended that the working group continue its examination of the draft prepared by the chairperson of the working group.[85] ABE-LOS IV completed its reading of

the draft.[86] There continued to be differences of opinion as to what would constitute an appropriate internal procedure related to an effective use of article 247.[87] A compromise remains to be found between those who believe that the procedure under article 247 does not in any way lessen the requirements under articles 248 and 249 of UNCLOS and those who consider a strict adherence to those provisions as negating the purpose of the simplified procedure outlined in article 247. It was recommended that the chairperson of the subgroup prepare a revised text of the procedure. A final version reflecting conclusions reached at ABE-LOS V in 2005 will be submitted to the IOC Assembly at its 23rd session, even if no agreement has been reached.

132. *Results of the revised IOC questionnaire on the practice of States in the field of marine scientific research and transfer of marine technology*. Terms of reference for the working group on this item were submitted by the IOC secretariat to ABE-LOS IV. In addition, a proposal was made and accepted for a change of the title of the subgroup to: IOC/ABE-LOS open-ended working group on the "Practice of the Member States in the application of Parts XIII and XIV of UNCLOS". In 2001, the IOC secretariat had prepared a questionnaire to obtain information for the purpose of (a) assessing the problems encountered in the implementation of Part XIII of UNCLOS on marine scientific research; (b) assisting States in establishing generally accepted guidelines, criteria and standards for the transfer of marine technology in accordance with article 271 of UNCLOS; and (c) informing the international community about the status of marine scientific research and the transfer of marine technology and on the practical issues raised in regard to the implementation of both Part XIII and Part XIV of UNCLOS. The working group will draw preliminary conclusions from the results of the questionnaire, contained in document IOC/ABE-LOS IV/9 and Annex. It was recommended that work on this topic should continue during the intersessional period, on the basis of the draft terms of reference.

133. *Legal framework within the context of UNCLOS applicable to the collection of oceanographic data*. Background information on this issue is contained in document A/58/65/Add.1, paragraphs 105 to 108. Pursuant to a decision of the IOC Assembly in 2003,[88] ABE-LOS IV established an open-ended working group under the chairmanship of Kari Hakapää of Finland in order to provide advice on the legal framework within the context of UNCLOS applicable to the collection of oceanographic data. Draft terms of reference state that the group will work in consultation with the board of the IOC-WMO-UNEP Committee for the Global Ocean Observing System (I-GOOS) with regard to the scientific and technical aspects. To launch discussions on this topic, the IOC secretariat organized at ABE-LOS IV an information session on "Advances in ocean science and modeling: benefits and new applications". The need to understand what "collection of data" meant in its different aspects was considered a prerequisite for the work of the subgroup. The presentations highlighted the importance of capacity-building for any project for the collection of data to be effective. It was recommended that the group should continue its work on the subject and submit to ABE-LOS V, in 2005, a draft based on observations made at ABE-LOS IV and during the intersessional period.

134. All recommendations adopted at ABE-LOS IV were endorsed by the IOC Executive Council at its 37th session, in June 2004.[89] The IOC Executive Council also adopted two relevant resolutions: one on the Global Ocean Observing System (GOOS), the other on capacity-building.

135. *Review of the structure of the Global Ocean Observing System (GOOS).*[90] At its 21st session the IOC Assembly had requested a review of the organizational structure of GOOS. It had noted the developing activities of GOOS, including the increasing services rendered to I-GOOS. Many countries are currently conducting their own coastal and ocean observation in line with the GOOS Strategic Plan and Principles. GOOS is thus, increasingly influencing national thinking and planning. The Assembly had concluded that there was a need to make GOOS more effective and for GOOS to establish new partnerships with United Nations bodies such as UNEP and FAO in order to address the regional needs of countries in relation to coastal GOOS. The Executive Council at its 37th session adopted resolution EC-XXXVII.6, which included an annex on new terms of reference for I-GOOS, the GOOS Scientific Steering Committee and the GOOS Project Office.

136. *A strategy for capacity-building.* Turning science and knowledge into a useful tool that can fulfil society's needs is fundamental to effective resource management and governance and is the broad principle behind IOC capacity-building and the "Training, education and mutual assistance" (TEMA) initiative.[91] TEMA is a strategy established by IOC in response to IOC commitment to capacity-building, as mandated in chapter 17 of Agenda 21 of the United Nations Conference on Environment and Development. The mechanisms by which capacity-building and TEMA operate include training programmes, workshops, UNESCO chairs and grants. IOC has evolved over time and changed the focus of its programmes to remain relevant. The new strategy will allow IOC to give priority to coastal ocean issues and initiate the building of regional competence to deliver products and modelling advice useful to stakeholders. IOC is now a focal point for ocean sciences and ocean services. In its resolution EC-XXXVII.9, the Executive Council instructed the Executive Secretary to produce a final draft strategy for capacity-building, for consideration by the IOC Assembly at its 23rd session.

VIII. Settlement of disputes: case law summaries

137. Under Part XV, section 1, of UNCLOS, States Parties are required to settle their disputes concerning the interpretation or application of UNCLOS by peaceful means in accordance with Article 2, paragraph 3, of the Charter of the United Nations and, to this end, shall seek a solution by the means indicated in Article 33, paragraph 1, of the Charter. However, when States Parties to UNCLOS involved in a dispute have not reached a settlement by peaceful means in accordance with section 1, they are obliged to resort to the compulsory dispute settlement procedures entailing binding decisions under section 2, subject to limitations and exceptions provided for under section 3.

138. UNCLOS provides four alternative forums for the settlement of disputes: ITLOS, ICJ, an arbitral tribunal constituted in accordance with annex VII to UNCLOS or a special arbitral tribunal constituted in accordance with annex VIII to UNCLOS. States Parties may choose one or more of those forums by written declaration made under article 287 of UNCLOS and deposited with the Secretary-General of the United Nations. The status of the relevant jurisprudence for the period under review is set out hereinafter, as well as in the reports of ICJ to the General Assembly.[92]

A. International Tribunal for the Law of the Sea

139. Details of the following cases may be obtained by consulting the web site of the Tribunal at www.itlos.org.

140. *Case concerning the Conservation and Sustainable Exploitation of Swordfish Stocks in the South-Eastern Pacific Ocean (Chile/European Community).* Proceedings were instituted on 19 December 2000 by Chile and the European Community which requested the Tribunal to constitute a special chamber of five judges to deal with the case. In 2001, the parties requested the President of the Special Chamber formed to deal with the case to suspend the proceedings as they had reached a provisional arrangement. At the end of 2003, the parties requested of the President that the proceedings before the Special Chamber continue to be suspended for a further period of two years and maintained their right to revive the proceedings at any time. By order dated 16 December 2003, the President of the Special Chamber further extended the time limit for making preliminary objections until 1 January 2006.

141. *Case concerning Land Reclamation by Singapore in and around the Straits of Johor (Malaysia v. Singapore).* On 5 September 2003, a request for the prescription of provisional measures pending the constitution of an Annex VII arbitral tribunal was submitted to the Tribunal by Malaysia against Singapore pursuant to article 290, paragraph 5, of UNCLOS. The dispute concerned land reclamation activities carried out by Singapore that allegedly impinged upon Malaysia's right in and around the Straits of Johor, which separate the island of Singapore from Malaysia. The Tribunal delivered its order on 8 October 2003. In its order, the Tribunal considered that the land reclamation works could have adverse effects on the marine environment in and around the Straits of Johor. Accordingly, the Tribunal considered that prudence and caution required Malaysia and Singapore to establish mechanisms for exchanging information on and assessing the effects of the land reclamation works. The Tribunal unanimously prescribed a number of provisional measures pending a decision by the Annex VII arbitral tribunal. Furthermore, the Tribunal decided that each party was to submit an initial report by 9 January 2004 on compliance with the provisional measures prescribed.

B. International Court of Justice

142. Cases before ICJ of relevance to the law of the sea may be consulted at the ICJ web site at www.icj-cij.org, as well as in the reports of the International Court of Justice to the General Assembly at its fifty-eighth and fifty-ninth sessions,[92] which contain the summaries of such cases for the period under review. Cases still pending before the Court and of relevance to law of the sea matters are: *Territorial and Maritime Dispute (Nicaragua v. Colombia)* and *Maritime Delimitation between Nicaragua and Honduras in the Caribbean Sea (Nicaragua v. Honduras).*

IX. Capacity-building

A. Programmes

1. The Nippon Foundation

143. On 22 April 2004, the United Nations and The Nippon Foundation of Japan concluded a trust fund project agreement to provide capacity-building and human resource development to developing coastal States Parties and non-Parties to UNCLOS through academic and fellowship opportunities.

144. The main objective of the project is to provide advanced education and training in the field of ocean affairs and the law of the sea or related disciplines to government officials and other mid-level professionals from developing coastal States so that they may obtain the necessary skills to assist their countries to formulate comprehensive ocean policy and to implement the legal regime set out in UNCLOS, as well as to build national capacities in this regard. The fellows are to focus on acquiring knowledge of UNCLOS and related international instruments adopted at the global or regional level, especially their implementation and enforcement at the national level.

145. Upon completion of the fellowship, fellows should have advanced awareness and understanding of key issues and best international practices in ocean affairs management, including enhanced professional and managerial capacities and competencies. They are expected to return to government service and use their experience to assist with the effective implementation of UNCLOS. They should be able to design, implement and/or evaluate specific improvement projects in their home countries related to ocean affairs and the law of the sea, develop a core leadership capacity and have in-depth understanding of legal frameworks, methodologies and tools to further improve implementation of international instruments and to provide for their effective enforcement in conformity with international law.

146. The research, training and acquisition of specialized experience will be implemented at a university or research institution affiliated with the project that has in-depth competence and expertise in the given field of studies. Fellows will undertake a maximum of six months of research at such institutions. Research topics will be chosen by the fellow, reviewed by the selection committee and approved by the supervising professor. After completing the research, fellows will have three months of training in the Division for Ocean Affairs and the Law of the Sea of the United Nations Secretariat or at an intergovernmental agency or organization competent in the chosen field.

147. Candidates must be aged between 25 and 35, possess a first university degree and be mid-level administrators in national government organs or agencies that deal with ocean issues. A selection committee will review applications and select candidates to be awarded project fellowships. For the first two years, only 10 fellowships will be awarded per annum. For the initial selection exercise for 2004-2005, nominations should be forwarded to the Division between 1 September and 30 October 2004.

2. Hamilton Shirley Amerasinghe Memorial Fellowship

148. The recipients of the 2002 seventeenth Award, Maria Cristina Pereira and Javier Plata Gonzalez have completed their research/study at the Dalhousie Law School, Dalhousie University, Canada and at the Lauterpacht Research Centre for International Law at the University of Cambridge, United Kingdom, respectively. Ms. Pereira's research, which was on archipelagic waters and archipelagic sea lanes, was supervised by Professor Phillip M. Saunders. Mr. Plata Gonzalez's research was on the conservation and management of marine resources and was supervised by Professor James Crawford. The fellows are at present carrying out their three-month internship programme in the Division for Ocean Affairs and the Law of the Sea.

3. TRAIN-SEA-COAST Programme

149. *Delivery of courses*. Background information on the TRAIN-SEA-COAST (TSC) Programme is contained in the report of the Secretary-General on oceans and the law of the sea to the General Assembly at its fifty-ninth session.[93] Subsequently, the TSC/South Pacific Course Development Unit successfully completed its second training package, entitled "Economics in community-based management projects". This course, which was developed within the framework of the South Pacific Project (GEF/SPREP), and funded by the Global Environment Facility (GEF), was delivered in Suva, Fiji, from 9 to 27 February 2004 to 19 participants, mostly managers of projects or "national coordinators", from Fiji, Tonga, Samoa, Vanuatu, Kiribati, Tuvalu, Papua New Guinea, Solomon Islands and Palau. The objective of the course was to provide the trainees with a sound understanding of key economic concepts and principles relevant in the planning, design, implementation and monitoring of development and conservation projects. The participants were also trained on how to apply economic concepts, tools and approaches at all stages of the project cycle, addressing community needs and aspirations. It is expected that the course will be integrated into the regular curriculum of the University of the South Pacific as part of a post-graduate degree in Economics and that it will be published as a model training manual on the subject for the Pacific region.

150. *Outreach activities of the TSC Programme*. TSC has also strengthened its cooperation with other United Nations bodies and programmes.[94] The memorandum of understanding between the Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities of the United Nations Environment Programme (UNEP/GPA) and the TSC Programme entered into force on 23 June 2003. It established a course development unit with a global mandate within the UNEP/GPA Coordination Office. The Course Development Unit, using the TSC methodology, has produced a training manual on "Improving wastewater management in coastal cities". A training course provides participants with information, tools and skills for selecting, planning and financing appropriate and environmentally sound municipal wastewater management systems. The training is geared towards project managers who develop and manage municipal wastewater collection and treatment systems, often with very limited resources. The course has been offered to at least 80 participants from six developing countries in South Asia and East Africa. Regional adaptations for Latin America, francophone Africa and other regions are planned for 2004.[95] The course was delivered to 20 participants in Portuguese in Rio Grande, Brazil, from 21 to 25 June 2004.

B. Trust funds

151. The following trust funds have been established for the assistance of developing countries in relation to subjects within the mandate of the Division.

152. *Trust fund to assist members of the Commission on the Limits of the Continental Shelf from developing States to participate in the meetings of the Commission.* In connection with the work of the thirteenth session of the Commission on the Limits of the Continental Shelf, three developing States received financial support from the voluntary trust fund for the purpose of defraying the cost of participation of the members of the Commission from developing States.[96] The balance of the trust fund as at 30 June 2004 is $115,772.

153. *Trust fund for the purpose of facilitating the preparation of submissions to the Commission on the Limits of the Continental Shelf for developing States, in particular the least developed countries and small island developing States, and compliance with article 76 of the United Nations Convention on the Law of the Sea.* This trust fund sponsored 11 trainees from developing States to participate in a training course at the Southampton Oceanography Centre in May 2004 to assist their States in the preparation of submissions to the Commission. The recent approval by the General Assembly of amendments to the terms of reference, guidelines and rules of the trust fund (resolution 58/240, annex) further facilitates the allocation of the funds for each applicant before the course takes place, rather than the reimbursement of the expenses incurred by the nominating State. The balance of the trust fund as at 30 June 2004 is $1,109,989.

154. *Trust fund to assist States in their settlement of disputes through ITLOS.* There were no new developments further to the report submitted in March 2004 (A/59/62). The balance of the trust fund as at 30 June 2004 is $56,193.

155. *Trust fund for assistance to States participating in the Conference on Maritime Delimitation in the Caribbean.* The balance of the trust fund as at 30 June 2004 was $60,404.72. On 22 July 2004, the trust fund received a third contribution from Mexico in the amount of $42,672.

156. *Voluntary trust fund for the purpose of assisting developing countries, in particular least developed countries, small island developing States and landlocked developing States, in attending meetings of the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea.* The trust fund established by General Assembly resolution 55/7 of 30 October 2000 to assist developing States to attend the meetings of the Consultative Process facilitated the active participation of representatives of 11 States at the fifth meeting of the Consultative Process. The balance of the trust fund as at 30 June 2004 is $157,230; no contributions have been received as yet in 2004.

157. *Assistance fund under Part VII of the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks.* By paragraph 10 of resolution 58/14, the General Assembly decided to establish an assistance fund under Part VII of the 1995 United Nations Fish Stocks Agreement, to be administered by FAO in collaboration with the Division for Ocean Affairs and the Law of the Sea. The purpose of the fund is to assist developing States in the implementation of the Agreement, to enhance their

ability to conserve and manage straddling fish stocks and highly migratory fish stocks and to develop their own fisheries for such stocks; to enable their participation in high seas fisheries for such stocks, including facilitating access to such fisheries subject to articles 5 and 11 of the Agreement; to facilitate their participation in subregional and regional fisheries management organizations and arrangements; and to meet the costs involved in any proceedings for the settlement of disputes to which they may be parties. FAO and the United Nations are finalizing procedures to make the fund operational in the very near future.

X. International Cooperation and Coordination

A. United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea

158. The fifth meeting of the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea (ICP) took place from 7 to 11 June 2004 in New York, co-chaired by Felipe Paolillo (Uruguay) and Philip D. Burgess (Australia), both of whom had been reappointed by the President of the fifty-ninth session of the General Assembly. In accordance with paragraph 68 of General Assembly resolution 58/240 of 23 December 2003, ICP focused its discussions on "New sustainable uses of the oceans, including the conservation and management of the biological diversity of the seabed in areas beyond national jurisdiction", as well as issues discussed at previous meetings. The report of the fifth meeting is set out in document A/59/122.

B. Global Marine Assessment

159. Background information on the Global Marine Assessment (GMA)[97] is contained in the report of the Secretary-General entitled "A regular process for the global reporting and assessment of the state of the marine environment, including socio-economic aspects: proposals on modalities".[98] In resolution 58/240, subparagraphs 64 (a) and (d), the General Assembly requested the Secretary-General to convene a group of experts to produce a draft document with details on the scope, general framework and outline of the GMA, peer review, secretariat, capacity-building and funding and to convene a GMA international workshop, in conjunction with the fifth meeting of the ICP to discuss the document produced by the group of experts. The outcome of the meeting of the group of experts, held in March 2004, is contained in document A/AC.271/WP.1, while the conclusions of the GMA workshop are contained in document A/59/126. Discussions on this issue will continue at the fifty-ninth session of the General Assembly.

C. Establishment of UN-Oceans

160. The fifth meeting of ICP considered progress made by the Secretary-General in establishing an effective, transparent and regular inter-agency coordination mechanism on ocean and coastal issues within the United Nations system pursuant to General Assembly resolution 57/141. The High-Level Committee on Programmes of the United Nations System Chief Executives Board for Coordination (CEB)

approved the creation of an oceans and coastal areas network (OCAN, subsequently changed to UN-Oceans), building upon the former Subcommittee on Oceans and Coastal Areas and in line with the call of CEB for a more dynamic arrangement. The terms of reference and work programme of UN-Oceans were prepared by an ad hoc task group of concerned organizations and other stakeholders and approved at the intersessional meeting of the High-Level Committee on Programmes held from 31 May to 1 June 2004.

161. UN-Oceans is composed of the relevant programmes, bodies and specialized agencies of the United Nations system, secretariats of financial institutions, such as the World Bank, secretariats of the relevant United Nations global environmental conventions, such as the CBD and the UNFCCC, as well as ISA. The Executive Secretary of IOC of UNESCO stated during the fifth meeting of ICP that UN-Oceans should facilitate inter-secretariat coordination across the United Nations system and related institutions, as well as providing, through time-bound, targeted task-forces, platforms for integrating into its work organizations outside the United Nations system representing civil society, non-governmental organizations and others. It should also follow-up issues raised at ICP and addressed by the United Nations General Assembly, as well as the goals adopted in the Johannesburg Plan of Implementation of the World Summit on Sustainable Development.

D. Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP)

162. GESAMP was established in 1969 by eight sponsoring organizations (IMO, FAO, UNESCO-IOC, WMO, WHO, IAEA, UNEP and the United Nations) in order to provide authoritative, independent, interdisciplinary scientific advice to the United Nations system so as to facilitate the protection and sustainable use of the marine environment. The independent review commissioned by the sponsoring organizations in 2001 strongly recommended that GESAMP should be continued, albeit with some changes in its work methods, organization and management. The sponsoring organizations are at an advanced stage in their work of restructuring GESAMP and are actively considering a "strategic vision" and draft memorandum of understanding.

Part Two
Vulnerable marine ecosystems and biodiversity in areas beyond national jurisdiction

I. Introduction

163. In resolution 58/240, paragraph 52, the General Assembly invited relevant global and regional bodies, in accordance with their mandates, to investigate urgently how to better address, on a scientific basis, including the application of precaution, the threats and risks to vulnerable and threatened marine ecosystems and biodiversity in areas beyond national jurisdiction; how existing treaties and other relevant instruments can be used in this process consistent with international law, in particular with UNCLOS, and with the principles of an integrated ecosystem-based approach to management, including the identification of those marine ecosystem types that warrant priority attention; and to explore a range of potential approaches and tools for their protection and management. Furthermore, the General Assembly requested the Secretary-General to cooperate and liaise with those global and regional bodies and to submit an addendum to his annual report to the General Assembly at its fifty-ninth session, describing the threats and risks to such marine ecosystems and biodiversity in areas beyond national jurisdiction as well as details on any conservation and management measures in place at the global, regional, subregional or national levels addressing those issues.

164. Pursuant to that request, the Division for Ocean Affairs and the Law of the Sea contacted the relevant United Nations agencies, global and regional intergovernmental organizations and non-governmental organizations requesting them to contribute to the above-mentioned addendum to the Secretary-General's report. The information below is based on contributions received, as well as on information available in the public domain.

II. Identification of vulnerable marine ecosystems and related biodiversity in areas beyond national jurisdiction

A. Legal concept of "beyond national jurisdiction"

165. The United Nations Convention on the Law of the Sea sets out the legal framework within which all activities in the oceans and seas must be carried out. The Convention divides marine space into a number of zones, both within and beyond the limits of national jurisdiction. The limits of these zones are measured from baselines extending along the coast. The areas within national jurisdiction include: internal waters, archipelagic waters; the territorial sea; the contiguous zone; the EEZ; and the continental shelf. Areas beyond the limits of national jurisdiction include: the water column beyond the EEZ, or beyond the territorial sea where no EEZ has been declared, termed the "high seas"; and, beyond the limits of the continental shelf, the seabed below the waters of the high seas which is designated as "the Area".

166. States disagree about the legal status of Antarctica. In 1959 States concluded the Antarctic Treaty. Over the years, the General Assembly adopted a number of

resolutions on the status of Antarctica. The inclusion of Antarctica in this report is without prejudice to the position of any State.

B. Ecosystems and biodiversity of concern

167. The nature of the biodiversity found within the water column and on the seabed, is determined by physical oceanographic conditions, such as temperature, water depth, currents and availability of nutrients, not by jurisdictional concepts. Biological communities that characterize deep and open ocean areas may occur both within and outside areas of national jurisdiction. Consequently, the vulnerable biodiversity of both the seabed and the water column outside national jurisdictions is often the same as or similar to that found within national jurisdictions.[99]

168. The marine environment can be divided into benthic and pelagic components. Benthic environments, which are at the bottom of the ocean, host the greatest portion of marine life. Pelagic environments, which include the ocean water itself, can be further divided into the light zone (up to 200 metres, where light penetrates) and the dark zone (below 200 metres, where it is completely dark). Pelagic environments host 2 per cent of the total number of marine species.

169. Today it is estimated that approximately 98 per cent of known marine species live in benthic environments and that more species live in benthic environments than in all the other environments on Earth combined. Most of these species are still unknown. The previously unsuspected high diversity of the deep-sea floor was first discovered in the late 1960s and remains a major focus for current deep-sea research. In addition to the discoveries of high species richness, more recent "mapping" studies are revealing a wealth of different habitats in the deep sea.

170. The assemblage of animals that live their entire lives in the light zone appears widely distributed, cosmopolitan and even global. Species in the light zone include: plankton, mostly small or microscopic organisms, which drift in great numbers in the water and feed fish and other larger organisms; phytoplankton, which can be considered the grass in the oceanic pasture and which converts carbon dioxide gas into 300 billion tons of food for tiny animals like krill, which in turn feed the larger animals up the food chain; and 20,000 species of fish and mammals.

171. Studies of diversity in pelagic communities have revealed some consistent trends related to depth and latitude. The number of pelagic species in the water column increases from high to low latitudes. The number of species also increases to a maximum at around 1,000 m depth and slowly declines at greater depths.[100]

172. In the pelagic environment, species of concern include predatory fish; transboundary and other migratory fish stocks; deep sea fish; marine turtles, cetaceans, and certain seabirds, especially albatrosses. There are very few scientific studies of the distribution, abundance and ecology of mobile species in these areas, and those that do exist cover different areas and are dispersed among different scientific disciplines. An added complication is that because these species or groups of species migrate, sometimes over vast distances, sometimes under water (and therefore very difficult to track), it is very difficult and expensive to acquire information about their distribution and movements. However, enough is known about threats to some of these species or groups of species that a precautionary

approach based on existing scientific knowledge can be employed now, with an emphasis on increased, targeted research to gain and then apply new knowledge.[101]

173. The dark zone, extending down more than 4,000 m into pitch-blackness, exceeds the volume of the 200 m light zone many fold. In the dark zone most animals feed on plants from nearer the surface, which precipitate like marine snow into the dark zone, wastes, carcasses of large animals, and swimming organisms, venturing below their normal light zone. The mass of organisms declines with depth, modified by mid-ocean ridges that affect circulation, just as mountains affect weather. Some 20,000 species live in mid-waters; arthropod crustaceans and chordate fish predominate, but strange floating jellyfish and molluscs are also important. A wide-range of species distinguishes the bottom water, where 100,000 of them are estimated to live. Although molluscs and arthropods are the most frequent species near the bottom, a broad spectrum of species is present in substantial numbers. The difficulty of exploring the dark zone challenges researchers. The potential for discoveries of species new to science is especially great for floating squid and octopus and gelatinous forms from many phyla below 1,000 m. Even among the best-known groups, the fish and crustaceans, there is still a striking lack of information. There is much information on mid-ocean fishes, including those inhabiting deeper layers, yet surprisingly few studies have focused on the mid-oceanic ridges to learn the ecology and distribution of the fishes.[102]

174. As regards the benthic environment, the following geographic features, habitats and/or biological communities have been identified as vulnerable or threatened in light of their physical characteristics as well as the anthropogenic threats to which they are exposed (such threats are described below): seamounts; deep-sea corals; hydrothermal vents; and other underwater features, which include cold seeps and pockmarks and soft-sediment environments, such as abyssal plains, trenches and submarine canyons.

175. The information provided below is intended to complement the information on the relevant ecosystems included in previous reports of the Secretary-General on oceans and the law of the sea (see A/58/65, paras. 176-184 and A/59/62, paras. 233-244).

1. Seamounts

176. Seamounts are undersea mountains of tectonic and/or volcanic origin. Many, if not most, of the estimated 100,000 or more oceanic seamounts may be unique islands of deep-sea biodiversity. In particular, the upper slopes and peaks of seamounts are home to newly discovered species that appear to exist nowhere else. For example, in just one expedition to the Tasman and Coral Seas in the South Pacific, scientists reported that 16 to 36 per cent of the 921 species of fish and other benthic macrofauna collected on 24 seamounts were new to science. In addition to potentially enhancing the productivity of the ocean surface above them in the form of heightened fish and seabird populations, seamounts can serve as homes to hard substrate suspension feeding communities (sponges, corals, etc.) and other highly diverse flora and fauna.[103]

177. The concentration of commercially valuable fish species around seamounts is well documented. As isolated islands or island chains of biodiversity beneath the water surface, seamounts have been increasingly recognized as being high in endemic species. This is due to increased densities of prey organisms over

seamounts which in turn are caused by enhanced primary productivity due to topographic effects on local hydrographic conditions. Experts have suggested that the uplifting of isotherms (upwelling) by current-topography interactions in the vicinity of seamounts introduces biogenes into nutrient-poor water and induces an increase in primary production of fish and zooplankton. Seamounts may also serve as "stepping-stones" for trans-oceanic dispersal and a refuge for species with contracting ranges. Studies indicate that qualitative and quantitative differences have even been observed in the structure of pelagic communities over seamounts and those in the surrounding oceans. For example, the diversity and abundance of large fish species, including sharks, rays, tuna, swordfish and gempylids (snake mackerels), around some tropical seamounts are much higher than in the surrounding oceanic waters. Other studies indicate that seamounts host a rich benthic community of sponges, macroalgae, corals, kelp beds and various suspension-feeder organisms, encouraged by the very clear surrounding oceanic waters.[104]

178. Many deep-sea species aggregating around seamounts are highly vulnerable to fishing because of their unique biology and adaptation to deep-sea environments. Although the biology and life history of the species are still poorly known, there is ample evidence to suggest that they are highly endemic and some of them appear to be extremely long-lived, late maturing and slow-breeding species, such as the roundnose grenadier and orange roughy. For instance, orange roughy have a low fecundity, due to the fact that not all large females reproduce in a given year. Research has indicated that the average age of orange roughy at maturity is 32 years and that the maximum age of adult fish is between 77 and 149 years.[105] Moreover, the concentration of these fish around seamounts, with small summit areas for breeding, also makes them vulnerable to an intense and localized fishing strategy.[106]

2. Cold-water coral reefs

179. Coral reefs, once thought to be restricted to warm shallow waters in tropical and subtropical regions, have been found in dark, cold, nutrient-rich waters off the coasts of 41 countries. They occur in fjords, along the edge of the continental shelf and around offshore submarine banks and seamounts in almost all the oceans and seas. While most studies have been carried out at high latitudes, where they occur at relatively small depths, cold-water corals are also increasingly being observed in the tropics, where they thrive at greater depths.[107]

180. These reefs occur in a wide variety of settings and vary from individual colonies measuring in the tens of centimetres to patches as broad as 10 kilometres. They provide a habitat for a high diversity of associated species, although few or no species particular to these habitats are known. Cold-water coral ecosystems are long lived, slow growing and fragile, which makes them especially vulnerable to physical damage. Dated fragments indicate that the reef at the Sula Ridge off the Norwegian coast is 8,500 years old.[108] There are large gaps in our knowledge of cold-water coral reefs, which need to be closed by further mapping and integrated, multidisciplinary research, including modelling of distribution, geology, biology, ecology and the assessment of human impact. However, already the scientific results and findings clearly demonstrate that cold-water coral ecosystems are important biodiversity hotspots and a biological resource with intrinsic and socio-economic value. In the light of the documented and potential threats, there is an urgent need to prevent further degradation of these vulnerable reefs.[109]

181. Deep-water reefs play an ecological role in the life cycle of many species and are inhabited by a variety of fish and invertebrates, including molluscs, sponges and crustaceans. For instance, in the North-East Atlantic, off the coasts of Norway, Lophelia pertusa reefs play an important role for species which exhibit high abundance on the reefs, but are rarely found in other habitats.[110] Off the coasts of Australia, deep-water reefs are found to shelter 242 species of invertebrates and 37 species of fish on the southern Tasmanian seamounts. Of these species, at least 24 to 43 per cent were new to science and many of those identified had not been previously recorded in Australian waters.[111] It is believed that if the reefs containing core populations of such species disappear, the species may have difficulties in either spreading or sustaining their own populations.[112] This in turn would have an adverse impact on fish species and other components of marine biodiversity that use deep-sea reefs as habitats.

3. Hydrothermal vents

182. Hydrothermal vents are highly localized sites of high temperature fluid-escape from the seabed. They are typically located on mid-ocean ridges, at depths of over 2,000 metres.[113] More than 100 vent fields have been documented along the 60,000 km global mid-ocean ridge system.[114] Despite the harsh conditions, such as the enormous pressure, a dearth of light and oxygen, the extremely high temperatures and concentrations of sulfide in their immediate vicinity, hydrothermal vents have proven to be fragile hotspots of biodiversity.

183. Within hydrothermal vent communities, nearly 500 new animal species have been identified, 90 per cent of which are not found anywhere else. High animal density and the presence of unusual species are known to be common characteristics of deep-sea vents all over the globe, with the composition of the fauna varying between sites and regions.[115] Massive groupings of giant worms, clams and mussels cluster around hydrothermal vents; the biomass in this area can be 500 to 1,000 times that of other deep-sea areas.[116] Instead of photosynthesis, hydrothermal vent ecosystems thrive on chemosynthesis, a process that uses energy from chemical oxidations to produce organic matter from CO_2 and mineral nutrients. Some chemosynthetic micro-organisms live within the tissues of giant worms and bivalves in a symbiotic relationship. Dissolved oxygen, however sparse, is still necessary to the metabolism of all animals and many micro-organisms at vent ecosystems, which means that vent ecosystems are dependent on the health of the ocean as a whole for their survival.[117]

4. Cold seeps and pockmarks

184. Cold seeps are areas where methane and sulfides diffuse through sediments in the ocean floor along continental margins. Both methane and sulfide play a critical role in the maintenance of the highly productive cold seep communities. Cold seep areas that have so far been studied are at depths ranging from 400 to 6,000 m in the Atlantic, the Eastern and Western Pacific and the Mediterranean Sea.[118] They occur along active and passive continental margins, in a wide variety of physiographic and geological settings, and typically they support abundant biological populations.

185. As with hydrothermal vents, cold seeps support chemosynthetic-based benthic communities: micro-organisms living off the carbon and energy sources provided by the petroleum within deep-ocean sediments, as well as other organisms such as tube

worms, mussels, sponges, snails, eels, crabs and fish. Rich cold-seep communities have been found on active margins down to depths of 6,000 m. The dominant seep species comprise large bivalve (clam) families, a number of which are new to science. Dense biological communities of mussels have also spotted around gas hydrates at 2,000 m off North Carolina and great densities of polychaete worms have been discovered on the surface of exposed methane hydrates in the Gulf of Mexico.[119]

186. Unlike in other areas of the deep sea, at seeps local species diversity is typically low, with dominance by a few species that are tolerant of hydrogen sulphide and other emissions. Nonetheless, these habitats exhibit high levels of endemism, often at a higher taxonomic level than species. The physiological adaptations that have been observed in many of these organisms are biologically unique.[120] Of 211 species so far reported, only 13 species occur at both seeps and vents. This endemism may be explained by barriers to larval migration or slow rates of methane seepage. It has been further observed that seep communities have typically a higher diversity than hydrothermal vent sites. The biological communities associated with these seeps are wide-spread and may be affected by physical disturbance.[121]

187. Chemosynthetic communities are also found on gas hydrates (methane packed within the crystalline structure of ice) exposed at the seafloor, as well as on carcasses of dead whales,[122] on sunken wood, or in the sediments of minimum oxygen zones intersecting with subduction margins. Most of these communities exhibit reduced diversity but a species composition in contrast to the surrounding sediments.[123]

5. Other sensitive underwater features (e.g. abyssal plains, trenches and submarine canyons)

188. Early photographs of deep-sea abyssal plains indicated a monotonous habitat of rolling hills of sediment with relatively few individuals and few species, but sampling of sedimentary habitats within the past four decades has demonstrated that the invertebrates resident in deep-sea sediments may comprise one of the largest species pools on the planet, potentially rivalling even tropical rainforests in terms of total species numbers. Some forms of polymetallic nodules are also inhabited by diverse organisms, including bacteria, protozoa and metazoan, which constitute another layer of species richness, or yet another reservoir of species diversity. In fact the animals living on the nodules are very different from those in the sediments.[124]

189. These organisms are characterized by: (i) low biological rates, due to a low flux of organic carbon and low food availability, both at the micro and macro fauna levels. In particular, the rates of animal growth and rates of recolonization following disturbance are very low; (ii) extraordinarily high species diversity; (iii) large and continuous habitat, but with significant environmental and biological gradients, in terms of the amount of organic matter sinking to the seafloor, the abundance of nodules and even the seafloor community structure; and (iv) low physical energy.[125]

190. Vulnerable ocean ecosystems also include deep-sea trenches, formed in areas of seafloor spreading where two tectonic plates collide and the crust is destroyed within the hot interior of the Earth. This "subduction" process forms deep-sea trenches, which have similar biological characteristics (i.e. endemic fauna adapted

to extreme conditions) to other deep-sea features. There are 37 known deep-sea trenches in the world's oceans. Conditions vary considerably between trenches but, typically, biological diversity decreases with increasing depth. While most deep-sea trenches lie within EEZs, a number are located on the high seas.

191. The benthos communities in deep-ocean trenches have been termed the "hadal fauna" and they are largely unique. They have adapted to cope with massive hydrostatic pressure, unusual trophic conditions and frequent physical disturbance. Samples of the fauna have been collected from most deep-sea trenches, although there have been few detailed studies. Trenches support a fairly diverse and abundant bacterial community that plays an important role in the diet of larger benthic animals. Undoubtedly there are many new species to be discovered.[126] Similarly, submarine canyons, deep-sea features that cut across continental slopes, influence local bottom water flows and may act as traps for organic matter, enhancing benthic populations as well as fish and cetacean life. Submarine canyons have been shown to have a higher biomass and diversity of commercially important species, such as lobsters, crabs, shrimp, flounders, hake, ocean pout, cusk and tilefish, due to the availability of a wide variety of substrate types, providing shelter. Such shelters are frequently used by juveniles, making these canyons important nursery grounds.[127]

192. In addition, submarine canyons support hotspots of secondary production. Studies of the fauna of canyons has indicated that the species found in those canyons are different from those on the adjacent slope and are constituted of sea stars, brittle stars, sea pen, holotharians (sea cucumbers), tubeworms, corals, sponges, hydroids (plant-like organisms) and anemones. Gorgorians (deep-sea corals) up to 5 m tall are very common canyon fauna. For instance, a recent scientific investigation of the La Jolla submarine canyon showed that its floor is inhabited by a dense assemblage of amphipod (shrimp species) and crustaceans that achieve high densities in excess of 3 million individuals. These dense crustacean populations attract a large number of demersal and pelagic fish predators, which feed on these animals. Another expedition conducted in the Tenryu Canyon off the Pacific coast of Japan has revealed high densities of giant clams at a depth of 3,830 m. In the same vein, the Gully, which is the largest submarine canyon off the coast of eastern Canada, shows an abundance of cetaceans much higher than other parts of the Scotian Shelf and Slope, with 11 recorded species.[128]

6. Arctic

193. The Arctic is a marine area dominated by a deep, ice-covered central ocean — some areas of which are situated beyond national jurisdiction — with surrounding shallow coastal seas. The shelf seas, ice edges and polynyas (areas of open water surrounded by ice) are seasonally highly biologically productive ecosystems, also due to the influence of circulating and mixing water layers. The dominant characteristic of the Arctic marine environment is sea ice, the extent of which varies greatly with the seasons. Changes in sea ice and other patterns such as plankton blooms, river flow timing and volume and large-scale ocean processes have substantial impacts on the Arctic marine ecosystem, as well as on species such as fish, seabirds, marine mammals and polar bears.[129]

194. The Arctic marine environment interacts biologically with the rest of the world through ocean currents, winds and rivers. This interaction brings pollution to the Arctic Ocean, including radionuclides, heavy metals, POPs and hydrocarbons,

which have now led to high levels of toxic chemicals in arctic wildlife. Besides pollution, other major threats to the Arctic ecosystems are posed by commercial fishing, shipping, oil and gas exploration and physical disturbance. Clean-up of oil spills would be difficult, if not impossible, in ice-covered waters. Increases in ultraviolet radiation and climate change have also potential for dramatic impacts on the Arctic marine ecosystem as they may affect life production and survival. There is mounting evidence that climatic and developmental pressures on the marine environment from shipping, dumping, offshore oil and gas development and land-based activities have been increasing in the Arctic.[130]

195. A multinational partnership of polar scientists participating in a project of the Census of Marine Life is in the process of carrying out an inventory of biodiversity in the Arctic Ocean.[131]

7. Antarctic

196. The Antarctic continent consists of a frozen land mass surrounded by the Southern Ocean. Only a small percentage of the land is exposed without snow or ice cover for a certain period of time in the year. The biodiversity of the Antarctic displays a remarkable contrast between the sea and the land. While the sea is rich with living forms, such as phytoplankton, zooplankton, fish, birds and sea mammals, on land plants and animals are very limited in variety and quantity because of the harsh environment. The extreme environment of the Antarctic, characterized by cold temperatures and extreme aridity and salinity, presents conditions in which biota have evolved unique characteristics for survival.[132]

197. Antarctic marine biodiversity is characterized by a short food chain from primary production to the top predators, the small number of species involved and high dependence on a single species, krill. Krill is the most abundant constituent of zooplankton and is the major food source for many Antarctic animals, including whales, fur seals, penguins and other birds, fish and squid. Therefore, the ecosystem is heavily dependent on the health of this species.

198. Some of the biological features of the Antarctic marine resources, such as the low reproductive rate of seals and whales, make them extremely vulnerable to over-exploitation. Major threats to Antarctic biodiversity include oil spills from increasing shipping activity, and increasing ultraviolet radiation due to the hole in the ozone layer, resulting in changes to phytoplankton communities which could have effects on the food chain. Global warming may contribute to the break-up of ice shelves, causing loss of habitat for animals dependent on the ice shelves, as well as the effect of increasing sea levels on low-lying regions in the rest of the world.

199. In a cold and slow-changing environment such as the Antarctic area, the effects of simple events can remain for years. For instance, organic material can take decades to decay where it would disappear in months in temperate parts of the world. Minute traces of man-made chemicals used in other parts of the world can be detected in the snow that falls over the region, becoming concentrated in the bodies of local wildlife.

C. Research activities

200. Notwithstanding recent discoveries, the deep-sea environment remains rather poorly studied and understood; in fact, only some 0.0001 per cent of the deep-sea floor has been subject to biological investigations. Few data are available for the benthic systems, especially for depths of 3 km or more. Data often vary considerably by taxa, depending on the basin that is under scrutiny. The general rule of thumb is that the numbers of species and the number of specimens actually decrease with decline at depths below 1 to 2 km.

201. Knowledge of the rather more accessible upper water column of the open ocean is more advanced. Yet, fundamental discoveries continue to be made, for example unexpectedly high levels of primary production, and the discovery of the pico- and nano-plankton and the prochlorophytes, which are microscopic plants thought to contribute almost as much to primary production in some regions as all previously known primary producers combined.[133]

202. Better knowledge is critical for the conservation and management of marine ecosystems and biodiversity in areas beyond national jurisdiction. In order to address this need, a number of initiatives and networks of scientists are turning their attention to the study of deep oceans and their ecosystems. Many institutions actively engaged in research manage databases that are publicly accessible on the Internet.

203. In terms of biological data, major uncertainties include: the distribution of vulnerable habitats and ecosystems (e.g. coral and vent systems); basic systematic information about the majority of benthic organisms; the effects of different toxins on marine mammals and other marine fauna; the role of micro-organisms (and their diversity) in food webs and aspects of biogeochemical cycling; the distribution and life cycles of many keystone species; the structure and dynamics of most deep-water food webs; the biological pathways for contaminants in deep ocean ecosystems; how long-term cycles in the physical environment affect midwater and seabed communities and processes; the links between biodiversity, productivity and other ecological processes; the impact of removing top predators, such as fish, from the oceanic ecosystems; how to distinguish between natural variation and human-generated change; and the potential impacts of alien invasive species on different high seas ecosystems.[134]

204. Fisheries data are often poor and in many fisheries catches are often misreported. Many of the stocks are migratory, which compounds the problem of designating appropriate reporting areas and interpreting data on catches and landings. On the other hand, few scientific surveys are carried out on even the most regularly caught commercial species, and many of the survey methods are destructive in themselves. Unknowns and uncertainties include: data to evaluate sustainable catch rates for many deep-sea species; stock structure and recruitment for many of the multi-species fisheries; the environmental impact of fishing techniques on vulnerable deep-sea ecosystems; life histories for many of the exploited species; the delimitation of deep-sea stocks — an urgent requirement that will probably need molecular genetic studies; improvements in the reporting of by-catch and discards; the increasing interest in the exploitation of deep-sea species for natural products and pharmaceuticals; the potential impacts of alien invasive species

on different fishery species; and the impact of over-fishing on the genetic diversity of target and by-catch species.[135]

III. Threats and risks

205. It appears that the main threats to ecosystems and components of biodiversity in areas beyond national jurisdiction are pollution, climate change, over-fishing and destructive fishing practices. Shipping can have distributed impacts, while seafloor drilling and mining, the laying of cables and pipelines, marine scientific research and commercially oriented activities relating to genetic resources, as well as tourism can have local impacts. These threats interact with key and vulnerable habitats and species to give areas of particular concern. Moreover, the nature and intensity of several impacts or pressures vary from place to place, as does the vulnerability of different marine species and ecosystems.[136]

206. The following section describes some of the major threats to biodiversity beyond national jurisdiction (excluding threats posed by fishing activities, which are summarized in chapter V). This is not an exhaustive list, but rather a summary of the main anthropogenic pressures that may affect key species and habitats. The order in which the threats are listed does not indicate their importance.

A. Pollution

207. Although the impacts of pollutants, such as environmental toxins, radioactive substances and sewage, are uncertain, the scientific community is very concerned that chronic pollution of the ocean will result in the depletion of marine ecosystems and biodiversity.[137] Contaminants posing the greatest threat to the marine environment are, in variable order of importance and depending on differing regional situations: sewage, nutrients, synthetic organic compounds, sediments, litter and plastics, metals, radionuclides, oil/hydrocarbons and polycyclic aromatic hydrocarbons (PAHs).[138] These pollutants can enter the marine environment from a number of sources, including land-based activities, shipping, dumping and other sea-based activities. Given the fluid character of the marine environment, such pollutants can travel long distances and affect areas both within and outside national jurisdiction.

208. Particular concern is raised by pollutants that readily dissolve in lipids (e.g. PCBs), because these tend to accumulate within body tissues and their concentration increases along food chains (i.e. they are biomagnified). Some of these compounds are highly specific in their toxicity (e.g. TBTs mostly affect molluscs), but by removing specific groups of organisms they disturb food webs and disrupt ecosystem structure. Recent evidence indicates that a wide variety of these substances can also disrupt the functioning of hormonal systems (endocrine disruption).

209. Increased concentrations of heavy metals may also cause severe physiological stress in those species living close to the limits of their physiological tolerance, particularly at certain stages in their life cycles. While considerable reductions in anthropogenic inputs of heavy metals have already been achieved through the abandonment of ocean dumping and the implementation of MARPOL regulations, greater emphasis should now be placed on reducing atmospheric inputs. In

particular, UNEP considers that priority should be given to reducing mercury inputs and to the identification of the major anthropogenic sources.

210. High concentrations of POPs could lead to pathological responses, for example through the depression of immune response. While concentrations of polychlorinated biphenyls (PCBs) in marine biodiversity are low relative to those observed in biota from heavily contaminated inshore environments, concentration of PCBs has been observed in whales. In the view of UNEP, measures aimed at reducing inputs and concentrations in inshore environments will also reduce concentrations in the open ocean.

211. There is evidence that the exposure of organisms to polycyclic aromatic hydrocarbons (PAHs) can cause reduced fecundity, interference with immune systems, the mimicking and disruption of hormonal functions, and direct toxic effects. Moreover, the impact of radionuclides on oceanic environments, resulting from the testing of nuclear weapons,[139] the dumping of wastes in deep water, the floundering of nuclear warships and accidents during transportation and discharges from coastal installations, also continues to be of considerable concern, although inputs of these substances have been drastically reduced. Monitoring has focused on the spread of contaminants from these sources; there have been no studies on their in situ impacts on biological communities.[140]

B. Marine debris

212. Marine debris is any persistent, manufactured or processed solid material discarded, disposed of or abandoned in the marine and coastal environment.[141] Marine debris travels widely with currents and winds and is found everywhere in the marine environment: floating on the water surface, mixed in the water column or lying on the seabed. Ocean-based sources of marine litter include the shipping and fishing industry, military fleet and research vessels, offshore platforms and fish farming installations. Main land-based sources of marine litter include municipal landfills located on the coast, transport of waste along inland waterways, discharge of untreated municipal sewage and tourism.

213. Threats from marine debris to marine wildlife are primarily due to entanglement or entrapment and ingestion.[142] Entanglement and entrapment means that animals become encircled or ensnared by litter (e.g. packaging bands, synthetic ropes and lines, drift nets), or that they manage to swim or crawl into an object (e.g. bottle, can, trap) but cannot get out of it. Once an animal is entangled, it may drown, have its ability to catch food or to avoid predators impaired, or incur wounds from the abrasive or cutting action of attached debris. Ingestion, which occurs when an animal swallows debris items, can lead to suffocation, starvation or malnutrition. Ingested plastic debris[143] could also be a route for PCBs and other chemicals into marine food chains, with the risk of bioaccumulation. PCBs, even at a low level, have a detrimental effect on marine organisms as they lead to reproductive disorders or death, increase risk of diseases and alter hormone levels.[144] In addition, litter items can also leach toxic substances (e.g. persistent organic compounds and metals) into sediments and water. These substances can be absorbed by microalgae and zooplankton, thereby causing bioaccumulation in fish and other animals feeding on the primary and secondary production of the sea. Marine debris can also smother the seabed, thus preventing the exchange of oxygen between water and sediments at

greater depths and ultimately hampering the life of bottom-living animals. Finally, floating anthropogenic debris is in part responsible for the widespread distribution of alien invasive species between sea areas, which represents a major threat to biodiversity, especially in Antarctic waters.[145]

C. Land-based activities, including airborne pollution

214. Human activities on land pose a great threat to marine ecosystems and biodiversity. The amount of waste produced on land and introduced into the sea is growing worldwide, as is the amount of pesticides, fertilizers and other agrochemicals washed and blown off the land into the oceans. Contaminants also enter the environment from industrial and commercial facilities, oil and chemical spills, non-point sources, such as roads, and wastewater treatment plants and sewage systems. Although the greatest impacts of pollution from land-based activities are observed in coastal areas, they can also reach areas beyond national jurisdiction through oceanic currents and air circulation.

D. Climate change and cyclical climate variability

215. Although it is difficult to predict the specific impacts of climate change on high seas and deep-sea benthic ecosystems, it is clear that significant climate change poses a threat to marine biodiversity. Changes in primary production as a result of climate change would alter food stocks in deep-sea ecosystems. Species ranges and deep-sea biodiversity might also be altered.[146]

216. The report of the Ad Hoc Technical Expert Group on Biological Diversity and Climate Change established by the Subsidiary Body on Scientific, Technical and Technological Advice of the Convention on Biological Diversity, drawing on the IPCC Third Assessment Report: Climate Change 2001, underlines that coastal and marine ecosystems are sensitive to changes in water temperature and extreme climatic events. In particular, observed impacts include changes in marine systems, particularly fish populations, which have been linked to large-scale climate oscillations, as well as large fluctuations in the abundance of marine birds and mammals across parts of the Pacific and Western Arctic, which may be related to changing regimes of disturbances, climate variability and extreme events.[147]

217. In terms of projected impacts on open ocean ecosystems, the report underlined that a number of changes in the physical and chemical characteristics of the ocean and seas (e.g. currents or circulation patterns, nutrient availability, pH, salinity and the temperature of the ocean waters) will affect marine ecosystems. Projected climate change could also have an effect on ocean currents, salinity and surface temperatures. This would alter species conditions, perhaps triggering local and global extinctions in the process.[148] Climate change impacts on the marine system also include sea surface temperature-induced shifts in the geographic distribution of the biota and compositional changes in biodiversity, particularly in high latitudes. The present knowledge of the impacts of potential changes in entire ecosystems due to climate change is still poor[149] (see also paras. 112-114 above).

E. Shipping (e.g. pollution, collisions)

218. Shipping carries more than 90 per cent of world trade and is the most energy-efficient and ecologically sound mode of freight transport, though it is also the most intensive human use of the high seas. Through accidental or intentional pollution, ships may release into the marine environment, either directly or indirectly through the atmosphere, a wide variety of substances, such as oil and oily mixtures, noxious liquid substances, sewage, garbage, noxious solid substances, anti-fouling paints, alien organisms. Noise also constitutes a form of pollution (see below). The introduction of such pollutants constitutes a threat to marine biodiversity, though most accidents occur in coastal areas.[150]

219. Ships may also cause harm to marine organisms and their habitats through physical impact, including ship strikes, in particular with whales. Ship strikes account for one third of all deaths of North Atlantic right whales and in particular calves, who have undeveloped diving capability.[151] The risk of ship collision is also the biggest threat facing the blue whale, the largest mammal on earth.

F. Noise

220. There is increasing concern among scientists and conservationists that noise pollution poses a significant and, at worst, lethal threat to whales and dolphins and other marine wildlife. Shipping is the biggest source of ocean noise, particularly in the northern hemisphere where most shipping lanes are located. Other sources of ocean noise include oil and gas exploration, seismic surveys, ocean experiments, military sources, acoustic harassment devices, dredging and marine wind farms. In particular, whales and dolphins, whose survival depends on their highly developed hearing and sound communication, are experiencing a drastic reduction in their ability to communicate across ocean basins. Other observed effects include stranding and displacement from habitat, tissue damage and mortality.[152] Noise can also cause extensive and irreversible damage to the inner ears of fish, which can cause death.[153]

G. Alien species

221. Biological invasions by non-native species constitute one of the leading threats to natural ecosystems and biodiversity. The main sources of unintentional introduction of invasive alien species into the marine environment are: ballast water of ships, hull fouling and other ship structure sources, and mariculture. In areas beyond national jurisdiction, the primary pathway for the introduction of alien species is the exchange of ballast water on the high seas. This is one of the methods available in order to prevent the introduction of ballast-mediated aquatic invasive species in coastal waters, where they cause enormous damage. The practice involves discharging the original coastal water in mid-ocean and replacing it with open ocean water, on the understanding that water uploaded in these areas contains fewer organisms and thus would present a lesser threat to the destination port and coastal habitats. Scientists have raised concerns that some coastal species may thrive in the open ocean, especially with temperature rises and the increase of pervasive marine debris (especially plastics), which provide them with shelter. Effective

implementation of new ballast water treatment technologies to eliminate the need for open-ocean discharge will assist in addressing this threat.

H. Waste disposal

222. Ocean dumping, as one of the sources of marine pollution, represents a threat to marine biodiversity,[154] particularly for soft sediments deep-sea environments such as slopes and rises, canyons, abyssal plains and trenches.[155] Dumping on coral reef ecosystems is also likely to physically harm corals and reefs by covering them or damaging their structure.[156] At present, ocean dumping is predominantly banned by international law, but dumping, either legal or illegal, continues to take place in the world's oceans.

223. There is growing pressure to use the deep oceans, including the deepest trenches, for the dumping of a range of wastes.[157] Deep-sea trenches have been proposed as suitable sites for waste disposal owing to their supposed isolation and supposed ability to retain waste materials. It is considered that any waste disposal impact will not extend beyond the particular trench dumpsite as they are geographically separated. Consideration has been given to the disposal of high-level nuclear wastes in trenches. Other forms of waste might also be considered for disposal in deep-sea trenches, such as mining tailings, offshore installations, sewage sludges and dredge materials. However, trenches are biologically productive systems. There are unknown risks associated with waste disposal as trenches are tectonically active. In addition, waters in deep-sea trenches often undergo thorough and relatively rapid mixing, extending to the deepest regions. Poisoning by toxic chemicals from waste disposal constitutes the main direct threat to trench fauna.[158]

224. Recently, it has been suggested that CO_2 could be disposed of into the deep ocean or into deep geological formation in order to mitigate the impacts of climate change.[159] It is possible to dispose of CO_2 in several different states (gaseous, liquid or solid) depending on the depth and temperature of the water. Although to date no evaluation has been carried out on the potential ecological impacts of ocean CO_2, all forms of CO_2 disposal may pose severe localized disruption to the environment and any species that may come into contact with it.[160]

I. Oil and gas exploration and exploitation

225. With the ever-increasing demand for energy sources, an increase in the exploitation of seabed resources in deep-water areas is inevitable. The presence of numerous petroliferous basins occurring partly or entirely within the abyssal zone of the world's ocean floor or in water depths of more than 500 metres was documented at a workshop organized by ISA.[161] While it is now technically possible to drill down to 2,000 metres below the seabed, it is not clear what effect such activities would have on deep-sea ecosystems. Discharges of drill cuttings and production water can disrupt deep-sea populations to distances up to 750 metres from the platform, and can spread two to six kilometres from the platform after six to nine years.[162] Other potential risks to marine biodiversity and ecosystems from this type of activity include seismic disturbances and electro-surveys, drilling, transportation and storage accidents, and in some cases even decommissioning and abandonment of offshore installations, although the tendency in very deep waters is to use mobile

offshore units. Systems of environmental control and management including environmental requirements and ecological monitoring should be devised in order to mitigate such threats.

226. Exploration and production of oil and gas could have a severe effect on coral habitats, due to physical impacts from the placement of structures (oil platforms, anchors, pipelines), or impacts from discharges of rock cuttings, drilling fluids and chemicals or discharges from the wells.[163]

J. Deep seabed mining

227. Deep seabed mining for polymetallic nodules, polymetallic sulphides and cobalt-bearing ferromanganese crusts could pose a severe threat for marine life in the abyssal plains, hydrothermal vents and seamounts.

228. When commercial exploitation of polymetallic nodules begins, thousands of square kilometres of abyssal plains will be subject to dredging and bottom-dwelling organisms will be harmed. While there is a strong consensus that the most serious impacts of mining are likely to occur at the seafloor and its related habitats, there is also some concern for larval fish.[164] The effects of mining will include: interference with surface-deposit feeding and suspension feeding, causing a diminution of the food particles those animals feeding at the sediment-water interface would be able to pick up; on a smaller scale, very small animals will become entombed, trapped beneath the sediment, and they will not be able to get up to the surface again to feed; and surface sediments will be removed along with the animals associated with them, in the area that the nodule collector passes over. If mining is a major-scale operation, obviously vast areas of the seafloor will be affected by actual nodule removal removing the habitat for the nodule fauna and removing the semi-liquid surface layer of sediment where the sediment-dwelling animals live.[165]

229. In the near future, mining for polymetallic sulphides, rich in gold and other valuable metals, may also become economically viable. Because these deposits are found on and around hydrothermal vents and seamounts, mining activities will pose a threat in terms of physical damage and inevitable severe disturbance to the biological community associated with these ecosystems. Mining activities may also result in increased sedimentation and plume generation, and disturb the vent water circulation systems. Although vent fauna in the vicinity of mining activities would undoubtedly be affected, vent communities may have the ability to re-establish at severely disturbed sites as long as there are hydrothermal emissions to support microbial chemosynthesis. However, mining for large seafloor polymetallic sulphide deposits on hydrothermally inactive vents, which provide no habitat for specialized vent fauna, would pose little threat in such areas. It is on these slow-spreading ridges that the larger sulphide deposits are to be found.[166]

230. The recovery of cobalt-rich ferromanganese crusts will also affect the biological communities around them, in particular, seamounts and cold-water coral reefs. Cobalt-rich ferromanganese crusts are conglomerates of metals that precipitate at slow rates over millions of years to form thick crusts on hard-rock substrates of seamounts and submerged volcanic mountain ranges. These crusts are most widespread in the Pacific Ocean because of the large number of seamounts present.[167]

231. Lastly, methane hydrates are being studied for future possibilities of exploitation. These are ice-like crystals formed in the depths of the ocean from natural gas (methane) and water, in which the water molecules form a rigid container for methane molecules. Extraction could present a problem, insofar as methane hydrates are sometimes found as deposits within sediments, as opposed to the rock strata of oil and gas wells. Gas hydrate deposits also have specialized biota associated with them, such as crabs, tube worms and mussels, which would be threatened by extraction activities.[168]

K. Marine scientific research and commercially oriented activities related to marine genetic resources

232. During the past decade the research efforts of scientists, biotechnology and pharmaceutical companies have increasingly shifted from shallow-water to deep-water ecosystems, including hydrothermal vents, seamounts, canyons and trenches, cold-water corals and sponges, given the unique nature of the organisms found in these ecosystems, described in the sections above. As scientific and commercial interest grows fast, so do the related impacts arising from frequent visits and repeat sampling, which, if carried out in an unsustainable manner, may include reducing or driving to extinction the endemic biodiversity of these ecosystems.[169]

233. For example, there is increasing interest from scientists, biotechnology and pharmaceutical companies in screening hydrothermal vents, seamounts and cold-water coral habitats and their associated fauna for species which produce potentially beneficial substances and genes. In the majority of cases, only small samples of biological material are necessary in the search for useful substances and genes. It has been contended that when larger-scale harvesting is planned for screening and development of marine biotechnology products, particularly of rare or endemic species in vulnerable ecosystems, regulatory measures, such as a code of conduct, will be needed to ensure that potential impacts are assessed in advance and that the resources are used in a sustainable manner.[170]

L. Laying of cables and pipelines

234. The effect of cables and pipelines on the ecology of benthic organisms and marine biodiversity depends on facility siting, design characteristics of the facility, construction methods and the receiving environment.[171] Submarine cables may come to rest on hard bottoms, sink into softer substrates or be ploughed into deeper layers in order to avoid damage by shipping equipment or anchors. The local impact remains limited, and even the ploughing and blanketing effects of the sediment turnover affect an area no more than a few metres wide. Disturbed areas are recolonized relatively quickly.[172] Some scientists suggest that the burying of cables could resuspend sediments, which could in turn smother nearby corals. Heavy anchors used by ships during the placement or repair of pipelines and cables could physically damage corals in a much larger area than the area damaged by the pipeline or cable itself.[173] Bottom-founded undersea cables may also generate electromagnetic fields and there are concerns that they may affect wildlife.[174] However, there is not enough data on biological effects of electromagnetic fields on marine biodiversity and more research is needed.

M. Tourism

235. It is generally acknowledged that the biggest danger facing most deep-sea vent ecosystems is physical damage caused by human activity, including submarine-based tourism.[175] Because of the spectacular nature and abundant animal life of these ecosystems, there is a growing interest in deep-sea hydrothermal vents for tourism. Dives to different vents are being offered by a few companies and have already taken place. Tourist trips to vents may be valuable in terms of education, to highlight awareness of the sensitivity of vent sites. However, uncontrolled visits to vents have the potential to have a negative impact on vent animals and their habitats via physical damage and light,[176] affecting their survival.[177] In reaction to this, the user community is currently developing a voluntary code of conduct for the sustainable use of hydrothermal vent sites by researchers and tour operators.[178]

236. Marine biodiversity can also be affected by tourist cruise ships. Cruise ships generate about 4,400 kg of waste a day on average, compared to the 60 kg a day produced by cargo ships and 10 kg a day by fishing vessels. About a third of the waste from cruise ships visiting the Caribbean is deliberately dumped.[179] In addition, cruise ships are believed to be responsible for introducing, through anti-fouling hull paints, harmful chemicals, including tributylin (TBT), to pristine environments such as the Antarctic.[180]

IV. Legal and policy framework

A. Treaties and other relevant instruments

237. A number of international instruments (both binding and non-binding) and general principles have been adopted by the international community to regulate some of the activities listed above and to provide for the conservation of marine biodiversity and ecosystems. Effective implementation of these instruments is of primary importance for the protection of vulnerable marine ecosystems and biodiversity beyond national jurisdiction. In this regard, it is important to bear in mind that the measures required to protect vulnerable marine ecosystems and biodiversity in any given area depend on the specifics of the marine area itself, its species, the particular ecosystem to be protected and the type of activity or activities that would have to be regulated.

1. General principles and policies

238. In the past few decades, increasing knowledge of environmental issues has led to the idea that we must shape our actions not only on the basis of our needs, but also with a more prudent care for their environmental consequences, so as to recognize the rights of both present and future generations. A number of general principles have been developed to give substance to that idea. Such principles should also constitute the basis of any measure for the conservation and management of vulnerable marine ecosystems and biodiversity in areas beyond national jurisdiction.

239. *Stockholm Declaration on the Human Environment.*[181] The United Nations Conference on the Human Environment, which met in Stockholm in 1972, stressed both the right of humankind to modify the environment for its development and the

dangers behind the huge capacity developed to do so. The Stockholm Declaration is a set of principles to promote the preservation and enhancement of the environment, providing for: the protection of species diversity and marine life, based on the idea that natural resources, "especially representative samples of natural ecosystems", must be safeguarded for the benefit of present and future generations through careful planning or management (Principle 2); humankind's special responsibility to safeguard, manage and plan for wildlife (Principle 4); the responsibility of States to take all possible steps to prevent pollution that might "harm living resources and marine life" (Principle 7); and the responsibility of States not to cause damage to the environment of other States or of areas beyond the limits of national jurisdiction (Principle 21).

240. ***World Charter for Nature.***[182] In 1982, 10 years after the Stockholm Declaration, the United Nations General Assembly adopted the World Charter for Nature, a document that similarly sets forth a series of principles for wise management and conservation of the environment, emphasizing the need for human laws to recognize and accommodate the laws of nature. In particular, the document underlines the need to protect genetic viability on Earth, as well as the need to safeguard habitats (General principle 2). Likewise, it recognizes that unique areas, representative samples of all the different types of ecosystems and the habitats of rare or endangered species must be given special protection (General principle 3).

241. ***Rio Declaration on Environment and Development.***[183] The United Nations Conference on Environment and Development, held in Rio de Janeiro, Brazil, in 1992, further developed the above principles in the context of sustainable development, stressing particularly the need for inter-State collaboration and developing a number of new and different approaches for the conservation and management of the environment.

242. In placing human beings "at the centre of concerns for sustainable development" (Principle 1), the Rio Declaration recognizes the sovereign right of States to exploit their resources pursuant to their environmental and developmental policies. At the same time, reiterating Principle 21 of the Stockholm Declaration, it stresses their responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction (Principle 2). The Rio Declaration introduced the precautionary approach, stating that where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation (Principle 15); the need to protect and restore "the health and integrity of the Earth's ecosystem", on the basis of common but differentiated responsibilities (Principle 7); the "polluter pays" principle (Principle 16); and the requirement to conduct environmental impact assessments before undertaking projects that would have a major impact on the environment (Principle 17). It further recognized the need to cater for future generations (Principle 3), integrate environmental protection into development (Principle 4), eliminate unsustainable patterns of production and consumption (Principle 8) and encourage public participation (Principle 10).

243. ***Johannesburg Declaration on Sustainable Development.***[184] The World Summit on Sustainable Development met in Johannesburg, South Africa, in 2002, to follow up on the commitments stipulated by the United Nations Conference on Environment and Development to assess progress in implementing sustainable

development. The Summit recognized that the global environment continues to deteriorate, as demonstrated by: the unceasing loss of biodiversity and depletion of fish stocks; the desertification of increasing areas of fertile land; the adverse effects of climate change; natural disasters which are more frequent and more devastating; the vulnerability of developing countries; and air, water and marine pollution, which continue to rob millions of a decent life. To address these and other issues, the Summit adopted a political declaration and the Plan of Implementation of the World Summit on Sustainable Development. The Johannesburg Declaration reaffirmed the collective responsibility of States to advance and strengthen the interdependent and mutually reinforcing pillars of sustainable development — economic development, social development and environmental protection — at the local, national, regional and global levels.

2. The ecosystem and precautionary approaches

244. The ecosystem approach is the backbone of sustainable development. It is a strategy for the integrated management of all elements of the environment and all components of its resources in order to promote their conservation and sustainable use. Together with the precautionary approach, the ecosystem approach has been one of the most important concepts of environmental and natural resource management of the past two decades. Both have been further elaborated in a number of instruments. The application of both the ecosystem and precautionary approaches to fisheries management is considered in chapter V below.

3. Global instruments

245. This section presents the instruments adopted at the global level both to regulate the activities identified above as posing a threat to ecosystems and biodiversity beyond national jurisdiction and to provide for the conservation of biodiversity or endangered and threatened species, including in areas beyond national jurisdiction. Global instruments dealing with fishing activities are referred to in chapter V.

(a) Legally binding instruments

246. *The United Nations Convention on the Law of the Sea (UNCLOS).* UNCLOS provides the legal framework for the protection and sustainable development of the marine and coastal environment and its resources. It embodies a comprehensive and unifying framework, which is developed by more specialized instruments.

247. In relation to areas beyond national jurisdiction, UNCLOS provides that the high seas are open to all States, under the regime of the freedom of the high seas, which includes freedom of navigation, freedom of overflight, freedom to lay submarine cables and pipelines, freedom to construct artificial islands and other installations, freedom of fishing — as qualified under Part VII, section 2, of UNCLOS — and freedom of marine scientific research (art. 87). Flag States have exclusive jurisdiction over vessels flying their flag on the high seas, save in exceptional cases expressly provided for in international treaties, including UNCLOS. The duties of the flag State over ships flying its flag as regards protection and preservation of the marine environment and the conservation and management of marine living resources are spelled out in articles 94, 117, 211, 212, 216 and 217. Failure by the flag State to exercise jurisdiction over its vessels on the high seas

constitutes a major problem in addressing the threats to marine ecosystems and biodiversity beyond national jurisdiction.

248. With regard to the seabed beyond the limits of national jurisdiction, Part XI of UNCLOS, as elaborated by the 1994 Agreement relating to the Implementation of Part XI of UNCLOS, provides that the Area and its resources (as defined in article 133) are the common heritage of humankind. The International Seabed Authority (ISA) is the organization through which States organize and control activities in the Area, particularly with a view to administering the resources of the Area and to sharing the benefits arising from activities thereof.

249. As regards marine scientific research in areas beyond national jurisdiction, Part XIII of UNCLOS provides the framework for the conduct of such activity. In particular, article 257 provides that all States and international organizations have the right to conduct marine scientific research in the high seas. As for the Area, articles 256 and 143 establish that all States and competent international organizations have the right to conduct marine scientific research in the Area for the benefit of mankind as a whole. ISA is given a mandate to promote and encourage the conduct of marine scientific research in the Area, and to coordinate and disseminate the results of such research. States may carry out research in the Area, but are required to promote international cooperation, for example, by ensuring that programmes are developed through the Authority or other international organizations as appropriate for the benefit of developing States and technologically less developed States, and by disseminating the results of research and analysis when available (art. 143).

250. UNCLOS also generally requires States to conserve and manage marine living resources within and beyond areas under national jurisdiction (arts. 61-67 and 116-119); and to protect and preserve the marine environment (arts. 192-235). States are under an obligation to take all measures necessary to prevent, reduce and control pollution of the marine environment from any source (land-based, seabed activities within national jurisdiction, activities in the Area, dumping, vessels, the atmosphere and the introduction of alien or new species). In taking measures to protect and preserve the marine environment, States are required to include those necessary to protect and preserve rare or fragile ecosystems, as well as the habitat of depleted, threatened or endangered species or other forms of marine life (art. 194, para. 5). The duty to take measures to prevent pollution resulting from the use of technologies under States' jurisdiction or control and the intentional or accidental introduction of species, alien or new, to particular parts of the marine environment, which may cause significant and harmful changes thereto is also provided for (art. 196, para. 1).

251. In relation to activities in the Area, UNCLOS provides that the necessary measures must be adopted to ensure effective protection for the marine environment from harmful effects which may arise from activities in the Area. To this end, the Authority must adopt rules, regulations and procedures to deal with pollution and other hazards to the environment, including its ecological balance, as well as for the protection and conservation of the natural resources of the Area and the prevention of damage to the flora and fauna (art. 145). States are required to adopt laws and regulations dealing with pollution from activities in the Area undertaken by vessels, structures and devices flying their flag or under their authority, which must be no less effective than the international rules, regulations and procedures to be

established by the Authority (arts. 147 and 209). Under article 162, the Council — the executive organ of the Authority — has the power to issue emergency orders, which may include the suspension or adjustment of operations, to prevent serious harm to the marine environment arising out of activities in the Area. Moreover, the Council can disapprove areas for exploitation in cases where substantial evidence indicates the risk of serious harm to the environment. The Legal and Technical Commission is requested to provide recommendations to the Council on such issues (art. 165).

252. *Rules and regulations adopted by the International Seabed Authority.* In implementing the requirements mentioned above relating to environmental protection in the Area contained in UNCLOS, ISA has developed Regulations on Prospecting and Exploration for Polymetallic Nodules[185] and is at present developing regulations for prospecting and exploration of polymetallic sulphides and cobalt-rich ferromanganese crusts (see paras. 22-24 above).

253. Part V of the Regulations on Prospecting and Exploration for Polymetallic Nodules is dedicated to the "Protection and preservation of the marine environment". Regulation 31 provides that the precautionary approach must be applied to activities in the Area in order to ensure effective protection for the marine environment. Contractors are required to take necessary measures to prevent, reduce and control pollution and other hazards to the marine environment arising from their activities in the Area as far as reasonably possible using the best technology available to it and to gather environmental baseline data and to establish environmental baselines against which to assess the likely effects of its programme of activities under the plan of work for exploration of the marine environment, and a programme to monitor and report annually in writing to the Secretary-General on such effects. If the contractor applies for exploitation rights, it shall propose areas to be set aside and used exclusively as impact reference zones and preservation reference zones. "Impact reference zones" are areas to be used for assessing the effect of each contractor's activities in the Area on the marine environment and which are representative of the environmental characteristics of the Area. "Preservation reference zones" are areas in which no mining shall occur, to ensure representative and stable biota of the seabed in order to assess any changes in the flora and fauna of the marine environment.

254. *Convention on Biological Diversity* (CBD)[186] also provides relevant rules for the conservation and sustainable use of the biodiversity of the seabed beyond national jurisdiction. The objectives of the Convention are the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources. The Convention makes two important distinctions with respect to its jurisdictional application: on the one hand, between "components of biological diversity" and "activities and processes", and on the other, between areas within and those beyond the limits of national jurisdiction. In areas within national jurisdiction, the provisions of the Convention apply to components of biological diversity and to processes and activities that may have adverse impacts on biological diversity.

255. In areas beyond the limits of national jurisdiction, the provisions of the Convention apply only to activities and processes carried out under a Contracting Party's jurisdiction or control which may have an adverse impact on biological diversity. Because they have no sovereignty or jurisdiction over the resources

located in areas beyond the limits of national jurisdiction, Contracting Parties have no direct obligation with regard to the conservation and sustainable use of specific components of biological diversity in those areas. Consequently, the Convention underlines the need for cooperation among Contracting Parties "in respect of areas beyond national jurisdiction ... for the conservation and sustainable use of biological diversity". The CBD Secretariat is of the view that such cooperation could, among many other things, include prohibition of destructive practices or the establishment of protected areas.

256. Finally, article 22 requires Parties to implement the Convention with respect to the marine environment consistently with the rights and obligations of States under the law of the sea.

257. In addition, two central concepts of the Convention are particularly relevant to the conservation and sustainable use of high seas biodiversity. These are the ecosystem approach and the precautionary approach. The Parties recognize the ecosystem approach as a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way (decision V/6). In the management of marine and coastal resources, the use of marine and coastal protected areas within wider coastal zone management strategies present an effective tool for the application of the ecosystem approach. Additionally, the ecosystem approach, combined with the obligations under article 5, could provide a basis for Parties to cooperate in the conservation and sustainable use of biodiversity in marine areas beyond national jurisdiction. The CBD Secretariat considers that such cooperation might include designating and managing protected areas extending into areas beyond national jurisdiction, in particular where that area is closely interlinked with or part of the same ecosystem.

258. Similarly, the commitment under article 8 (a) to "establish a system of protected areas" needs to be interpreted in the light of the ecosystem approach. Consequently, this commitment can only be effectively fulfilled if Parties considered the establishment and management of their protected area systems not simply in national terms but, where the relevant ecosystem extends beyond national boundaries, in ecosystem or bioregional terms as well. Paragraph 3 of the annex to decision IV/5 further states that protected areas should be integrated into wider strategies for preventing adverse effects on marine and coastal ecosystems from external activities. This clearly indicates the Parties' recognition that conservation and sustainable use are complementary objectives under a marine and coastal area management strategy and that protected areas may serve as a tool to accomplish this.

259. The precautionary approach is articulated in the preamble to the Convention and is also reiterated in decision II/10 of the Conference of the Parties, which relates to marine and coastal biological diversity. This decision, adopted by the Conference of the Parties at its second meeting, in Jakarta in November 1995, states that "the work [of the Convention on conservation and sustainable use of marine and coastal biological diversity] should not be impeded by the lack of full scientific information and will incorporate explicitly the precautionary approach in addressing conservation and sustainable use issues". The precautionary approach provides a strong argument for action to be taken to ensure the conservation and sustainable use of biodiversity in marine areas beyond national jurisdiction, even though the currently existing data on such biodiversity is patchy and uneven in nature.

260. The Conference of the Parties to CBD is also working towards the maintenance and enhancement of the resilience of the components of biodiversity to adapt to climate change.[187]

261. *Convention on the Conservation of Migratory Species of Wild Animals* (CMS). The Convention has the objective of protecting migratory species and habitats listed in two appendices: appendix I species, which are in danger of extinction and for which specific obligations are undertaken, and appendix II species, which would significantly benefit from international cooperation.[188]

262. A number of marine species were included in appendix I and appendix II by the Seventh meeting of the Conference of the Parties to the CMS, in September 2002.[189] More recently, at the twelfth meeting of the CMS Scientific Council (Glasgow, 31 March-3 April 2004), participants discussed the status of appendix I species, including the monk seal, the franciscana dolphin and marine turtles. Appendix II species under discussion included the whale shark. The Council considered ways to assist in reaching the goal of a significantly reduced loss of biodiversity by 2010.[190]

263. *The Convention on International Trade in Endangered Species* (CITES) addresses the threat to biodiversity by banning commercial international trade in an agreed list of endangered species (appendix I) and by regulating and monitoring trade in others that might become endangered (appendix II). Species that are not necessarily threatened on a global level, but that are protected within individual States, where that State has sought the help of other CITES Parties to control international trade in that species, are listed under appendix III. CITES listings have a potential role in promoting the management and sustainable use of marine species and products. Therefore, the protection of additional species threatened by international trade through listing or strengthened protection, based on the precautionary approach and scientific information, constitutes an important tool for the conservation and management of marine biodiversity.

264. Many marine species are listed under CITES, including some species of sea turtles, all great whales, the basking and whale sharks, the entire genus of seahorses and all dolphins. A "voluntary resolution" was adopted at the twelfth meeting of the Conference of the Parties to improve international monitoring of the harvest and trade of toothfish, with the aim of assisting the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) in its efforts to eliminate the illegal fishing of toothfish. The thirteenth meeting of the Conference of Parties to CITES, which will take place in October 2004, will discuss proposals for the listing of the great white shark, the humphead wrasse (a reef fish) and several species of turtles.[191]

265. *International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78).* The objective of MARPOL is to prevent the discharge of harmful substances resulting both from accidents and the normal operation of ships through regulations in six annexes: oil (annex I); noxious liquid substances (chemicals) carried in bulk (annex II); harmful substances carried by sea in packaged form (annex III); sewage (annex IV); garbage (annex V) and air pollution (annex VI). Annexes I, II, III, IV and V are currently in force. States must accept annexes I and II, the remainder are optional. Annex I to MARPOL 73/78 was recently amended in order to advance the final phasing-out date for all categories of single-hull oil tankers and to ban the carriage of heavy

grade oil in single-hull tankers.[192] The amendments are expected to enter into force on 5 April 2005 under the tacit acceptance procedure. MARPOL protects biodiversity by preventing ship source pollution that can harm marine life.

266. An important feature of MARPOL 73/78 is the concept of "special areas". Large sea areas may be designated as "special areas" under annexes I, II and V in order to provide them with a higher level of protection than other areas of the sea by imposing the strictest discharge requirements. Annex VI to MARPOL provides for the designation of sulphur oxide (SOx) emission control areas. A special area can be defined as "a sea area where for recognized technical reasons in relation to its oceanographical and ecological conditions and to the particular character of its traffic, the adoption of special mandatory measures for the prevention of sea pollution by oil, noxious liquid substances or garbage, as applicable, is required". A special area may encompass the maritime zones of several States or even an entire enclosed or semi-enclosed area. It can therefore include areas of high seas. IMO has developed "Guidelines for the designation of special areas" (IMO Assembly resolution A.927(22)) to provide guidance to States Parties in the formulation and submission of applications for the designation of special areas.

267. *IMO "Guidelines for the identification and designation of particularly sensitive sea areas"* (PSSAs). The PSSA guidelines were adopted by IMO Assembly resolution A.927(22) in 2001 to provide a procedure for designating an area as a PSSA when it "needs special protection through action by IMO because of its significance for recognized ecological, socio-economic, or scientific reasons and because it may be vulnerable to damage by international shipping activities". In order for an area to be identified as a PSSA, it must meet at least one of the three criteria listed in the guidelines: (i) ecological; (ii) social, cultural and economic; or (iii) scientific and educational; and should be at risk from international shipping activities.

268. An application for the designation of a PSSA must indicate how the area is particularly sensitive and why it is at risk from international shipping activities. A proposal for one or more associated protective measures must be made within two years or the application must contain a description of how the area is already being protected. If no associated protective measure is being proposed because IMO measures already exist, then the application should show how the area is already being protected by such measures. The Guidelines prescribe that the protective measures must be available through IMO and suggest the following options: (i) to designate an area as a special area or as a SOx emission control area or to apply special discharge restrictions to ships operating in a PSSA; (ii) to adopt ships' routeing and reporting systems near or in the area; and (iii) to develop other measures, such as compulsory pilotage schemes or vessel traffic management systems, aimed at protecting specific sea areas against environmental damage from ships. Any action taken for the failure of a ship to comply with the requirements of the associated protective measures has to be consistent with UNCLOS. The Guidelines do not specify the size of a PSSA. PSSAs can be established within and beyond the limits of the territorial sea and can include a buffer zone, i.e., an area contiguous to the core area for which specific protection from shipping is sought. PSSAs can be identified in a MARPOL special area. IMO must determine if the proposed size of the area is commensurate with that necessary to address the identified need. PSSAs could therefore include areas of the high seas, if protective measures are deemed necessary for that area.

269. *International Convention on the Control of Harmful Anti-fouling Systems on Ships*. The Convention controls the use of methods (usually toxic paint) of preventing marine organisms from attaching to the hulls of ships, thereby slowing down the progress of the ships through the sea. Toxic substances used to kill organisms on the ship's hull will also harm marine life in the surrounding waters. Adopted by IMO on 5 October 2001, the Convention will enter into force 12 months after the date on which no fewer than 25 States, representing 25 per cent of the gross tonnage of the world's merchant shipping, have expressed their consent to be bound by it. The Convention not only bans the use of organotin-based anti-fouling systems, but also provides a mechanism through which other harmful anti-fouling systems may be banned or regulated in the future. Effective 1 January 2003, all ships are prohibited from applying or re-applying organotin compounds acting as biocides in anti-fouling systems. By 1 January 2008, ships either shall not bear such compounds on their hulls or external parts or surfaces, or shall bear a coating that forms a barrier to such compounds leaching from the underlying non-compliant anti-fouling systems. Parties will be required to prohibit and/or restrict the use of harmful anti-fouling systems on ships flying their flag, on ships not entitled to fly their flag but which operate under their authority and on all ships that enter a port, shipyard or offshore terminal of a Party.

270. *International Convention for the Control and Management of Ships' Ballast Water and Sediments*. The International Convention for the Control and Management of Ships' Ballast Water and Sediments was adopted on 13 February 2004 and will enter into force 12 months after ratification by 30 States, representing 35 per cent of world merchant shipping tonnage. The aim of the Convention is to prevent, minimize and ultimately eliminate the transfer of harmful aquatic organisms and pathogens through the control and management of ships' ballast water and sediments. Organisms in ballast water taken up in one ecosystem can have devastating consequences when released into other ecosystems at the end of a ship's voyage. The Convention represents an international minimum standard and does not prevent Parties from taking more stringent measures with respect to the prevention, reduction or elimination of the transfer of harmful aquatic organisms and pathogens through the control and management of ships' ballast water. Mid-ocean ballast water exchange is recommended as a treatment option. Regulation B-4 requires that ballast water exchange be conducted at least 200 nautical miles from the nearest land and in water at least 200 metres in depth.[107]

271. *London Convention*. The Convention on the Prevention of Marine Pollution by Dumping of Wastes and other Matter, also known as the London Convention, was adopted in 1972 and entered into force in 1975. The London Convention is designed to control the dumping at sea of waste and other matter which could be harmful to marine life. A so-called "black- and grey-list" approach is applied to wastes, which can be considered for disposal at sea according to the hazard they present to the environment. The dumping of black-listed wastes is prohibited. Most wastes are now blacklisted. Dumping of the grey-listed materials requires a special permit from a designated national authority under strict control and provided certain conditions are met. All other materials or substances may be dumped after a general permit has been issued. However, even these materials or substances must undergo a waste assessment process to determine their effects on marine life. A review of the London Convention resulted in the development and adoption of the 1996 Protocol to the London Convention, or London Protocol, which, when it enters into force,[108] will

replace the London Convention. Under the "reverse listing" approach of the Protocol, nothing may be dumped, except for materials listed in an annex. However, even those must be assessed to determine whether they are safe to be dumped. Pursuant to the precautionary approach, in case of uncertainty, dumping is not permitted. The London Convention also applies to activities of vessels flying flags of States Parties beyond national jurisdiction and the Parties undertake to cooperate in the development of procedures for the effective application of the London Convention on the high seas.

272. *United Nations Framework Convention on Climate Change (UNFCCC).* UNFCCC was adopted in 1992 following a report of IPCC calling for a global convention on climate change, in the light of widespread concerns for global warming and its effects, including possible changes to thermohaline circulation (including the Gulf Stream) in the world's oceans. UNFCCC set a framework for intergovernmental work on climate change, calling for varying commitments from different groups of countries with the goal of stabilizing greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. This aim is to be achieved in a time frame, so as to allow ecosystems to adapt naturally to climate change. In 1997, the Conference of the Parties to UNFCCC, at its third session held in Kyoto, Japan, adopted the Protocol to UNFCCC in order to set emission limitation and reduction commitments. The Kyoto Protocol has yet to come into force. The implementation of the provisions of UNFCCC and its Protocol, by contributing to the reduction of greenhouse gases in the atmosphere and of the quantities of CO_2 absorbed by the oceans, will benefit vulnerable marine ecosystems and biodiversity beyond national jurisdiction, as well as in all other areas of the oceans.

273. *Stockholm Convention on Persistent Organic Pollutants.* The Convention, which was adopted in 2001, entered into force on 17 May 2004. The Parties undertake to eliminate the production and use of certain toxic chemicals — an initial list of 12, which may be expanded over time, includes PCBs and DDT. Persistent organic pollutants (POPs) accumulate in the fatty tissue of living beings, including fish, mammals (humans included) and birds. Organisms exposed to POPs include those not directly affected but that enter in contact with affected organisms (an example of this type of exposure is the consumption by humans or other species of POP-contaminated fish). Atmospheric and oceanic currents represent a pathway for exposure, which may affect areas beyond national jurisdiction. The first meeting of Parties to the Stockholm Convention will take place in May 2005.

(b) Non-binding instruments and arrangements

274. *Agenda 21, chapter 17, of the 1992 United Nations Conference on Environment and Development* takes an ecosystem approach to ocean management and calls for new approaches to marine and coastal area management and development, which are integrated in content and are precautionary and anticipatory in ambit (para. 1). It underlines the need to protect and preserve vulnerable marine ecosystems and, with respect to the high seas, it requires States to protect and restore endangered marine species, preserve marine habitats and other ecologically sensitive areas and promote scientific research with respect to the marine living resources in the high seas (para. 46).

275. *Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA).* UNCLOS article 207 requires States to adopt laws and regulations to prevent, reduce and control pollution of the marine environment from land-based sources. Responding to the need for multilateral action to protect the marine environment, GPA[195] was adopted by an intergovernmental conference, held in Washington, D.C., in November 1995, to address the interface between freshwater and marine environments. The Plan of Implementation of the World Summit on Sustainable Development[196] calls on Governments to advance implementation of GPA and the Montreal Declaration on the Protection of the Marine Environment from Land-based Activities, with particular emphasis during the period from 2002 to 2006 on municipal wastewater, the physical alteration and destruction of habitats, and nutrients.

276. UNEP considers that existing indicators should be used to monitor progress towards internationally agreed targets (e.g. amount of POP per unit of sea water, or levels of land-based sources of pollutants in marine mammal fatty tissues) and emphasizes the need for international regulation, best-practice definition and enforcement of penalties against infringements of point and non-point sources of pollution.[197]

277. *International Coral Reef Initiative (ICRI).* ICRI is a partnership among nations, intergovernmental organizations, and non-governmental organizations, established in 1994 in order to create or strengthen programmes to conserve, restore and promote the sustainable use of coral reefs. ICRI also serves as a coordination mechanism for regional, national, and international programmes that monitor reef conditions. These activities are facilitated by the International Coral Reef Action Network (ICRAN), an operational network established by ICRI. In November 2003, the ICRI Coordination and Planning Committee created a committee to assess the potential role of ICRI in protecting cold-water reefs, many of which lie in waters beyond national jurisdiction. At a recent meeting (Okinawa, Japan, 2-4 July 2004) a draft decision on cold-water corals was submitted to the Coordination and Planning Committee. The decision would have ICRI include cold-water corals in its ambit and create a working group and related work programme on the topic (the final report of the meeting was not available at the time of writing).

278. *Plan of Implementation of the World Summit on Sustainable Development.* The Plan of Implementation was adopted in September 2002, in Johannesburg, South Africa. In order to promote the conservation and management of oceans, the Johannesburg Plan of Implementation states that actions are needed at all levels to maintain the productivity and biodiversity of important and vulnerable marine and coastal areas, including areas within and beyond national jurisdiction. It recommends the implementation of the work programme arising from the Jakarta Mandate on the Conservation and Sustainable Use of Marine and Coastal Biodiversity of the Convention on Biological Diversity; the use of the ecosystem approach; the elimination of destructive fishing practices; the establishment of marine protected areas consistent with international law and based on scientific information, including representative networks by 2012; time/area closures for the protection of nursery grounds and periods; and the development of national, regional and international programmes for halting the loss of marine biodiversity.[198]

4. Regional instruments and arrangements

279. *UNEP Regional Seas Programme*. The Regional Seas Programme is a global programme implemented through a collection of decentralized independent regional conventions and action plans focusing on environmental assessment, management, legislation and institutional and financial arrangements for management of the marine and coastal environment. Action plans are implemented regionally by legally binding conventions, where such exist. At present, there are 18 regional seas programmes, 14 of which are covered by legally binding instruments. Among other issues, the programmes address the loss of marine biodiversity.

280. Not every regional convention and action plan in the UNEP Regional Seas Programme covers areas beyond national jurisdiction. The Mediterranean Action Plan (MAP) is an example of a UNEP regional seas area which includes maritime spaces in the high seas. MAP is supported by a legal framework consisting of the Barcelona Convention[199] and six protocols addressing specific environmental issues, including the 1995 Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean, which replaced the 1982 Protocol concerning Mediterranean Specially Protected Areas. The great step forward given by this new protocol is the definition of "specially protected areas of Mediterranean importance". These areas may extend their limits partly or wholly beyond the jurisdictional waters of the involved countries, giving a legal framework to marine protected areas in the high seas and allowing for the conservation of pelagic and deep-sea species and habitats. This is the first binding instrument in international law which explicitly envisages the creation of protected areas in the high seas.

281. *Commission for the Protection of the Marine Environment of the North-East Atlantic* (OSPAR). More than 50 per cent of the OSPAR "maritime area" as defined by article 1 of the 1992 Convention for the Protection of the Marine Environment of the North-East Atlantic is beyond national jurisdiction. Annex V on the Protection and Conservation of the Ecosystems and Biological Diversity of the Maritime Area, which forms an integral part of the Convention, requires Contracting Parties to take the necessary measures to protect and conserve the ecosystems and the biological diversity of the maritime area, and to restore, where practicable, marine areas which have been adversely affected. Contracting Parties must cooperate in adopting programmes and measures for those purposes for the control of human activities capable of degrading the marine environment.

282. At its second Ministerial Meeting, in 2003,[200] OSPAR adopted a revised Strategy on the Protection and Conservation of the Ecosystems and Biological Diversity of the Maritime Area. The OSPAR biodiversity strategy requires Contracting Parties to the OSPAR Convention to assess the various human activities that may adversely affect the marine environment of the OSPAR maritime area, with a view to promoting the development of appropriate measures to prevent any such adverse effects. In areas beyond national jurisdiction, the role of OSPAR is to highlight, on the basis of the best scientific advice, the areas that need protection.[201] Over the past few years, Contracting Parties to the OSPAR Convention have developed criteria for the selection of species and habitats, and have applied these criteria in the preparation of a list of threatened and declining species and habitats in the North-East Atlantic, which serves as a tool to focus and prioritize work under the Convention.[202]

283. The Biodiversity Committee was established by OSPAR in 2000 to facilitate the implementation of the OSPAR Strategy on the Protection and Conservation of the Ecosystems and Biological Diversity of the Maritime Area. In 2003, OSPAR created two new groups under the Biodiversity Committee: the Working Group on Marine Protected Areas, Species and Habitats and the Working Group on the Environmental Impact of Human Activities. The Biodiversity Committee is charged with drawing up plans and programmes designed to control human activities and it can impose measures for instituting protective, conservation, restorative or precautionary measures related to specific sites or a particular species.

284. *Antarctic Treaty system.* The Antarctic Treaty system includes the Antarctic Treaty itself, the measures in effect under the Treaty,[203] associated separate international instruments in force[204] and the measures in effect under those instruments. Most of these instruments contain provisions that may contribute to the protection of biodiversity in Antarctica. The 1959 Antarctic Treaty, which applies to land and sea areas south of 60° South Latitude, reserves Antarctica for peaceful purposes only, banning any military activity not related to scientific research or other peaceful purposes (art. I). Article V prohibits any nuclear explosions in Antarctica and the disposal there of radioactive waste material, thus eliminating a further potential threat to marine biodiversity in the Antarctic continent.

285. The Convention on the Conservation of Antarctic Marine Living Resources came into force in 1982, in pursuance of the provisions of article IX of the Antarctic Treaty.[205] It was the first fisheries agreement to incorporate the ecosystem approach. The 1972 Convention for the Conservation of Antarctic Seals protects several seal species, limiting their harvest to an optimum sustainable yield so as to maintain the balance within the ecological system of the Antarctic.[206]

286. The 1991 Protocol on Environmental Protection to the Antarctic Treaty (Madrid Protocol) enunciates the environmental principles governing the conduct of States Parties in relation to Antarctica. Its goal is to ensure "the comprehensive protection of the Antarctic environment and dependent and associated ecosystems". The Madrid Protocol comprises general provisions such as objectives, principles, and establishes a Committee on Environmental Protection. It contains five annexes: annex I, on environmental impact assessment; annex II, on conservation of Antarctic fauna and flora; annex III, on waste disposal and waste management; annex IV, on prevention of marine pollution;[207] and annex V, on area protection and management.[208] Article 3 furnishes legally binding principles for protecting and conserving the Antarctic ecosystem, such as (i) the Parties are obligated to meet specific environmental standards and to limit adverse impacts on the environment, (ii) the Parties are obligated to give priority to scientific research, (iii) the Parties are obligated to ensure that human activities are planned and carried out on the basis of information sufficient to permit prior impact assessments and (iv) the Parties are obligated to conduct environmental monitoring. Article 7 places a prohibition on all mining activities in Antarctica.

287. *Arctic Council.* An outgrowth of the Arctic Environmental Protection Strategy, the Arctic Council is the only major intergovernmental initiative for the Arctic involving all eight Arctic States.[209] The Arctic Council is a regional forum, not an international organization, founded on the basis of non-binding instruments. Its main objective is to promote cooperation, coordination and interaction on common Arctic issues, in particular environmental protection and sustainable development.

The scientific work of the Arctic Council is carried out in five expert working groups. Most relevant for the protection of marine biodiversity is the work of the Arctic Monitoring and Assessment Programme, whose primary function is to determine the levels of anthropogenic pollutants in the Arctic; the working group on the Protection of the Arctic Marine Environment, created to describe the environmental threats to the Arctic marine environment and review the adequacy of existing international legal instruments; and the Conservation of Arctic Flora and Fauna working group, which aims at promoting the conservation of biodiversity and the sustainable use of living resources in the region.[210]

5. National measures

288. In the absence of reports on measures adopted at the national level to address the conservation and management of vulnerable marine ecosystems and biodiversity beyond national jurisdiction (except measures relating to fishing activities, referred to in chap. V below), it is not possible at this time to present any substantial body of information in that regard.

B. Management tools

289. A number of management tools are available under the instruments presented above for the conservation and management of vulnerable marine ecosystems and biodiversity beyond national jurisdiction. In determining priorities for action, it is important to: identify the sensitivity to threats of specific ecosystems or species; identify the specific threats to which such ecosystems or species are highly sensitive; identify the activities which pose those threats; identify the geographic location(s) where those ecosystems or species are vulnerable to the threat (i.e. where the threat occurs in the same area and at the same time as sensitive aspects of biodiversity); identify existing or required management mechanisms to manage those threats in those areas; identify the authorities responsible (or to be responsible) for managing those activities.

290. *Organizations and agreements*. In relation to shipping, special areas and PSSAs are adopted through IMO. ISA has the mandate to adopt and implement rules and regulations in respect of mining activities in the Area, which include the setting aside of areas where no mining can be carried out. The Regional Fisheries Management Organizations can adopt and implement measures in relation to fishing activities beyond national jurisdiction. Moreover, regional conventions could play an important role. For example, in the case of the OSPAR Convention, the Contracting Parties to the Convention have in recent years developed criteria for the selection of species and habitats, and have applied these criteria in the preparation of a list of threatened and declining species and habitats in the North-East Atlantic, which will serve as a tool to focus and prioritize work under the Convention.

291. *Establishment of marine protected areas*. The establishment of a network of marine protected areas in areas beyond national jurisdiction has been identified as one of the tools to protect high seas biodiversity. Today less than 1 per cent of the surface of the world's oceans has been designated as a protected area, and only a few of the existing marine protected areas are beyond national jurisdiction. The need to develop a global representative system of marine protected areas within and beyond national jurisdictions, as well as to develop measures for their sustainable

use has been discussed in a number of forums.[211] The need to balance competing interests in those areas, e.g. the freedoms of navigation and fishing and other freedoms of the high seas, as well as the exploration and exploitation of mineral resources in the Area and the conduct of marine scientific research, is an important issue in the debate. It has also been underscored that the establishment of additional marine protected areas and marine parks, in particular beyond national jurisdiction, must be based on scientific information, in conformity with existing instruments, including UNCLOS, the Convention on Biological Diversity, the Regional Seas Conventions, etc., and must take into account the interests of all relevant stakeholders.

292. Recently the issue of marine protected areas beyond national jurisdiction was addressed at the seventh session of the Conference of the Parties to CBD (COP7),[212] and at the fifth meeting of ICP.[213]

293. *Voluntary codes*. One of the tools available for the management of activities in areas beyond national jurisdiction is the development of voluntary codes. For example, in the light of the threats posed to deep seabed ecosystems, and in particular hydrothermal vents, by marine scientific research, InterRidge is working on a draft code of conduct entitled "Possible elements for a code of conduct to conserve and sustainably use hydrothermal vent sites".[214]

294. The draft was prepared by the members of InterRidge and is for the consideration by the InterRidge Steering Committee. The problems that the draft addresses are the threats deriving from human activities to the more accessible hydrothermal vent sites in the world's oceans, both within and beyond the limits of national jurisdiction. The draft recognizes that the activities most likely to involve hydrothermal vent systems and their associated biological communities are seabed mining for associated polymetallic sulphide deposits, submarine-based tourism and marine scientific research. Of these, marine scientific research and submarine-based tourism pose the most immediate threat to hydrothermal vent systems and their associated biological communities. The draft further states that conflicting uses are also increasingly common. As natural resource-based activities, marine scientific research and submarine-based tourism need to be placed on a sustainable footing in order to conserve biodiversity, maintain the scientific value of the most accessible sites and minimize conflicts. The basic principles contained in the draft would be a very useful basis for discussion at the next ISA workshop for preparing recommendations on general practices for prospectors and explorers of the deep seabed.[215]

V. The impact of fishing on ecosystems and biodiversity[216]

A. Impact of fishing

295. All fishing activity has some impact on ecosystems and biodiversity. In fact, the dominant human-caused direct effect on fisheries ecosystems is fishing itself. Overfishing affects marine habitats worldwide and has the potential to alter the functioning and state of marine ecosystems, particularly vulnerable ecosystems, as well as the biodiversity associated with them.

296. Experts have summarized the "ecosystem effects" of overfishing activities as follows. Overfishing (i) affects predator-prey relationships, which can lead to shifts

in community structure that do not revert to the original condition upon the cessation of fishing pressure; (ii) can alter the population size and body size composition of species, by affecting populations of large slow-growing and late-maturing species, which could lead to a fauna composed of primarily small-sized individual organisms. This can lead to shifts in the relative abundance of species with different life history characteristics, independent of any changes in species interactions; (iii) can affect populations of non-target species (e.g. cetaceans, birds, reptiles and elasmobranch fish) as a result of by-catches or ghost fishing; (iv) can reduce habitat complexity and perturb seabed (benthic) communities; and (v) can lead to genetic selection for different body and reproductive traits and can extirpate distinct local stocks. Selective harvesting, such as fisheries that favour capture of one sex over another, thus altering the sex ratio or sex-specific size frequency, or both, or fisheries that remove the late-maturing fish, can have a high degree of impact on the genetic diversity of marine species populations, in addition to a real danger of extinction.[217] Some of these impacts are outlined in the following paragraphs.

297. *A reduction of target fisheries biomass in the ecosystem* is a consequence of an unsustainable harvest, hence the importance of enforcing sustainable catch limits. There is a lack of detailed data for most fisheries in areas beyond national jurisdiction not covered by RFMOs. Even for the areas covered by RFMOs, questions have been raised regarding the reliability of data because of unreported and misreported fishing. These deficiencies argue for the application of a precautionary approach to catch limits. For example, experience from even relatively well-managed orange roughy fisheries in waters adjacent to New Zealand and Namibia has shown that precautionary limits were set too high, leading to depletion of stocks. Moreover, overfishing may remove an irreplaceable amount of biomass of both target and non-target species, resulting in long-term or even permanent changes in the ecosystem and possible elimination of some species.

298. *Impact on non-target fisheries and by-catch taken in fisheries operations*. By-catch is a major problem because marine ecosystems are multi-species in nature and fishing gear is not perfectly selective either in species or in size. By-catch can include: non-target fish species of lower commercial value than the target catch; juvenile fish or non-fish species such as dolphins taken in purse-seine tuna fisheries; marine turtles in shrimp fisheries and some longline fisheries; and seabirds such as albatrosses and petrels in longline fisheries. By-catch of deep-water oceanic sharks has been recognized as a particular problem, with this species thought to be among marine species at most risk of extinction. The mortality rate for all fish by-catch is high, and for deep-sea species usually 100 per cent. Some non-fish species have slightly higher resistance.

299. *Impact on habitats as a result of the use of destructive fishing gear, including discarded equipment and other marine debris associated with fishing*. Bottom trawls cause extensive damage when dragged across the seabed. A 55m net can cover 33km² in a day's fishing. The effects of trawls are particularly serious on seamounts where high levels of endemism and little studied megafaunal distributions have been recorded; and on cold-water corals which are threatened in their own right (with their reproductive potential still little understood) and as a shelter for commercial fish stocks and other benthic fauna. Bottom trawling has been prohibited in several areas under national jurisdiction.[218] In addition, problems associated with marine

debris include so-called "ghost fishing" by lost gillnets and other bottom gear as described above.

300. *Indirect impacts on other species through food chain effects* include reduced feeding opportunities for deep-water species when the prey they rely on are depleted by overfishing. This is a particular problem for predators in deeper waters because they have few alternative sources of food. Scientific research in this area has just begun. However, it is known that even without significant deep-water fishing, the taking of mesopelagic stocks (at medium depths around 200 to 1,100m) can affect deep-water stocks and their related ecosystems.

B. Global fisheries instruments addressing the impact of fishing in areas beyond national jurisdiction

301. The obligation of all States to cooperate with respect to the conservation and management of fisheries beyond national jurisdiction is contained in the respective provisions of UNCLOS and is also set forth in the following specific fisheries instruments.

302. The 1995 *United Nations Fish Stocks Agreement* elaborates upon articles 63 and 64 of UNCLOS, providing the legal basis and enunciating general principles for the adoption of measures to maintain or restore populations of harvested fish stocks and other marine species within the same ecosystem. The general principles include: the application of the precautionary approach; the assessment of the impacts of fishing, other human activities and environmental factors on target stocks and species belonging to the same ecosystem; the adoption of conservation and management measures for non-target species belonging to the same ecosystem; the minimization of pollution, waste, discards, catch by lost or abandoned gear, catch of non-target species; the elimination of overfishing; and the protection of biodiversity in the marine environment. The Agreement requires the strengthening of existing RFMOs and the creation of such organizations where none exist. RFMOs are to organize the collection of scientific data and the application and enforcement of conservation measures. The Agreement only covers fishing on the high seas related to straddling and highly migratory fish stocks. There is no legally binding global agreement containing conservation and management measures for discrete high seas stocks that spend no part of their life cycle in areas under national jurisdiction.

303. The 1993 FAO *Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas* applies to all vessels fishing on the high seas. Flag States must not allow vessels entitled to fly their flag to be used for fishing on the high seas unless authorized to do so by the appropriate authorities. Furthermore, they must ensure that they are able to exercise effectively their responsibilities before authorizing their vessels to fish on the high seas. Most importantly, Parties must take the necessary measures to ensure that their vessels do not engage in any activity undermining the effectiveness of international conservation and management measures. The Agreement also provides for the sharing of data on vessels through FAO.[219]

304. Non-binding instruments include the 1995 FAO Code of Conduct for Responsible Fisheries and its international plans of action for reducing incidental catch of seabirds in longline fisheries, the conservation and management of sharks, and the management of fishing capacity; and the International Plan of Action to

Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing. Within the broader framework of the Code, FAO has also adopted the 2001 Reykjavik Declaration on Responsible Fisheries in the Marine Ecosystem and issued the FAO Technical Guidelines on the Ecosystem Approach to Fisheries (2003 supplement).[220] These instruments complement each other.

305. The threat posed by illegal, unreported and unregulated fishing in all its forms to vulnerable ecosystems is particularly serious. For example, conservation and management measures are undermined by fishing vessels from States which are neither members of nor cooperating with competent RFMOs, including vessels flying the flag of States operating open registers which may not be fishing illegally, if the States are not parties to the relevant instruments. In addition, much fishing is unregulated because of gaps in the international framework of legally binding instruments with respect to both species and areas.

C. Measures adopted through regional fisheries management organizations[221]

306. The instruments outlined above provide a basis for the adoption within regional fisheries management organizations (RFMOs) of measures to mitigate the impact of fishing on ecosystems and biodiversity. Such measures may be regarded as implementation of the general obligation to cooperate established by UNCLOS and/or the specific measures required by the United Nations Fish Stocks Agreement.

307. To date, RFMOs have adopted the following binding measures in this area: by-catch limitation (including by-catch of sharks and marine turtles) and data collection in Pacific tuna fisheries through the Inter-American Tropical Tuna Commission (IATTC); collection of by-catch data in Atlantic tuna fisheries through the International Convention for the Conservation of Atlantic Tunas; a freeze on catch levels in deep-water fisheries managed by the North-East Atlantic Fisheries Commission; by-catch limitations established by the North-West Atlantic Fisheries Organisation; and application of precautionary reference points in setting catch limits and allocations in these and other RFMOs. The strongest measures have been adopted by the Commission for the Conservation of Antarctic Marine Living Resources, for example gear restrictions to avoid by-catch, including incidental mortality of seabirds.

308. The South East Atlantic Fisheries Organisation (SEAFO) and the Western and Central Pacific Fisheries Commission (WCPFC) have both been established since the adoption of the Fish Stocks Agreement with founding instruments modelled on the Fish Stocks Agreement to include application of both precautionary and ecosystem approaches. The SEAFO and WCPFC agreements came into force in 2003 and 2004 respectively, but States Parties have not yet adopted any measures. Notably, SEAFO also covers discrete high seas stocks and is the only RFMO with all members (currently three) parties to the Fish Stocks Agreement.

309. Among older RFMOs, IATTC adopted an ecosystem approach in its Agreement on the International Dolphin Conservation Programme, designed to reduce and ultimately eliminate dolphin by-catch in purse seine fisheries. Moreover, in 2003, parties adopted a revised IATTC Convention reflecting the principles of the United Nations Fish Stocks Agreement, in particular, the ecosystem approach. The General Fisheries Commission for the Mediterranean's revised 1997 Convention

provides for the application of the precautionary approach and explicit ecosystem-related measures. Negotiations are also under way to establish a South West Indian Ocean Commission expected to apply measures based on the Fish Stocks Agreement and measures for discrete high seas stocks in the Indian Ocean.

310. Despite the adoption of the two new agreements and the revision of older agreements noted above, there are still gaps in the network of legally binding measures, because RFMOs do not cover all areas beyond national jurisdiction and do not manage all harvested species. The 2003 report of the Secretary-General on the implementation of the Fish Stocks Agreement identified gaps in the south-east Pacific Ocean for all fish stocks and gaps in the south-west Atlantic, south-east Pacific and Caribbean for straddling fish stocks, in addition to gaps where newly adopted agreements and agreements in preparation have not lead to any actual measures for highly migratory species in the west-central Pacific, as well as both straddling and discrete high seas stocks in both the south-east Atlantic and Indian Ocean.[222]

Conclusions

311. Information provided in the present addendum as well as the main report on oceans and the law of the sea unequivocally illustrates the ongoing process of strengthening the international regime for the oceans, at the core of which is UNCLOS. The tenth anniversary of the entry into force of the Convention will be commemorated by the international community on 16 November this year. The developments and activities reported in the present addendum confirm the importance of the Convention and its implementing Agreements as the legal framework within which activities in the oceans and seas are carried out. They also confirm the strategic importance of the Convention as the basis for national, regional and global action and cooperation in the maritime sector. The goals of the Convention will be further strengthened if those States that have not become parties to the Convention and its implementing Agreements consider doing so.

312. As a substantial part of the present addendum is devoted to developments and activities in furtherance of those sections of the Convention that are related to navigation, two issues of particular importance in this respect should be highlighted, namely maritime security and assistance to persons in distress at sea.

313. As is underlined in the present addendum, in the light of recent developments, it is of paramount importance that States take all necessary action to strengthen maritime security, including through the implementation of the ISPS Code, to ensure that ships are not being misused for terrorist or criminal purposes.

314. With reference to the second issue, it needs to be emphasized that masters have the duty to render assistance to persons in distress at sea without regard to the nationality or status of the persons. In this connection, attention should be drawn to the recent amendments to SOLAS and SAR and the associated Guidelines adopted by IMO. Once in force, they will place for the first time obligations on Governments to coordinate their actions and to cooperate so that survivors are disembarked from the assisting ship and delivered to a place of safety.

315. It is expected that the General Assembly will address these two issues at its fifty-ninth session and will encourage States to comply with measures aimed at

strengthening maritime security and providing assistance to persons in distress at sea.

316. As the uses of the oceans constantly increase, resulting in growing pressure on their ecosystems, there is mounting concern about the state of the oceans in general and about vulnerable marine ecosystems in particular. Consequently, it is urgently necessary to know to what extent the ever-increasing human activities related to the uses of the oceans produce marine environmental changes that may be harmful to marine ecosystems. These factors indicate a growing need to establish an international mechanism that would allow the state of marine ecosystems, causes of change, benefits derived from marine ecosystems, and threats and risks to be effectively addressed (A/AC.271/WP.1, para. 5). Such a mechanism could also provide reliable scientific evidence based on which policy makers at the national, regional and global levels could make necessary decisions to protect the marine environment and to mitigate the environmental impacts of human activities in the oceans.

317. This urgent need was recognized by the 2002 World Summit on Sustainable Development, which in paragraph 36 (b) of the Johannesburg Plan of Implementation decided to "establish by 2004 a regular process under the United Nations for global reporting and assessment of the state of the marine environment, including socio-economic aspects, both current and foreseeable, building on existing regional assessments" (GMA). The General Assembly, at its fifty-eighth session, also endorsed this decision and agreed on a series of steps for the establishment of the GMA. Given the urgency of this matter, any further delay in the establishment of the GMA, a request already highlighted in the Johannesburg Plan of Implementation, will not be well received by the world community. It is sincerely hoped that, despite the recent setback at the GMA international workshop convened in June this year in conjunction with the fifth meeting of ICP, Member States will be able to overcome the existing difficulties and at its fifty-ninth session the General Assembly will agree on a procedure that will allow the preparatory phase of the GMA to be launched by the end of this year or, at the latest, at the beginning of 2005.

318. The main report on oceans and the law of the sea submitted to the General Assembly at its fifty-ninth session, as well as the present addendum, emphasize that increasing awareness of the rich biological diversity of the areas beyond the limits of national jurisdiction, as well as concerns regarding the threats posed to it by human activities, have recently led to closer examination of the existing conservation and management regimes. As also noted in the present addendum, UNCLOS sets out a legal framework within which all activities in the oceans are to be conducted, including in areas beyond national jurisdiction. This general legal framework is supplemented by a number of international instruments adopted at the global and regional levels. Effective implementation of the relevant provisions of UNCLOS and those instruments, within the scope of their regulatory mechanisms, is essential to conserve and manage vulnerable marine ecosystems and biodiversity beyond national jurisdiction. Nevertheless, it appears that additional steps are needed. The General Assembly may therefore consider what further action is required, keeping in mind that the protection of vulnerable marine ecosystems and biodiversity depend on the specificities of particular marine areas, as well as the type of activities that would need to be regulated. As a first step, the location of ecosystems or species and their degree of sensitivity to threats, the specific threats

to which such ecosystems or species are highly sensitive, and the activities which pose such threats need to be clearly identified on the basis of both sound science and the precautionary approach. Secondly, priorities for action should include the identification of existing and/or required mechanisms to confront and alleviate threats in those areas, as well as the identification of the authorities now responsible, or who will be responsible, for dealing with those threats.

319. It should be observed that there is an increasing need for capacity-building in developing countries, in particular with respect to the preparation of submissions to the Commission on the Limits of the Continental Shelf. Certain steps have already been taken; however, they are far from being sufficient. Cooperation and coordination among all organizations and entities having technical and financial resources is therefore essential in order to achieve maximum results, as well as for avoiding duplication of efforts. As far as the Division for Ocean Affairs and the Law of the Sea is concerned, it is in the process of launching a number of initiatives, in cooperation with concerned organizations and entities, aimed at assisting developing countries in the preparation of their submissions to the Commission.

320. Lastly, it should be noted that the purpose of the Secretary-General's annual report is to facilitate discussions on the agenda item "Oceans and the law of the sea". Based on available information, the report as well as its addendum attempt to reflect as accurately as possible the factual developments that have taken place during the reporting period, without bias or prejudice. On the occasions when Member States provide additional information or clarifications, that material is also incorporated in a way which is intended not to prejudge the position of any State.

Notes

[1] For the report of the fourteenth Meeting of States Parties, see document SPLOS/119 and Corr.1.

[2] This includes provision for inflation.

[3] For the decision on the budget, see documents SPLOS/117 and SPLOS/119.

[4] For the decision of the thirteenth Meeting of States Parties, see document SPLOS/103.

[5] See SPLOS/103, paras. 94-102, SPLOS/91, paras. 111-116, SPLOS/73, paras. 85-92 and A/58/65/Add.1, para. 10.

[6] The revised Rules of Procedure embody amendments and additions adopted by the Commission up to 30 April 2004. In addition, they supersede and replace all previously issued documents containing the Rules of Procedure of the Commission and their revisions or corrections (CLCS/3 of 12 September 1997, CLCS/3/Corr.1 of 27 April 1998, CLCS/3/Rev.1 of 14 May 1998, CLCS/3/Rev.2 of 4 September 1998, CLCS/3/Rev.2/Corr.1 of 28 March 2000, CLCS/3/Rev.3 of 6 February 2001 and CLCS/3/Rev.3/Corr.1 of 22 May 2001), as well as the Modus Operandi of the Commission (CLCS/L.3 of 12 September 1997) and the internal procedure of the subcommission of the Commission on the Limits of the Continental Shelf (CLCS/L.12 of 25 May 2002).

[7] For more information concerning the activities of these two trust funds, see paras. 152-153.

[8] President, International Marine Minerals Society/United States Geological Survey.

[9] Institute of Marine Sciences, University of Kiel, Germany.

[10] Director, GEOTOP-UQAM-McGill Research Centre, University of Quebec, Montreal, Canada.

[11] ISBA/10/C/WP.1.

[12] The first annual progress report was available with the Authority.

[13] ISBA/10/C/4, para. 20.

[14] For information about the Croatian measure, see A/59/62, para. 30.

[15] See A/59/62, para. 31.

[16] For information regarding the deposits, see Information Circular Nos. 1, 3-6, 8-14, 16-19, and 20 (to be issued), and Bulletin Nos. 27, 29, 32, 34-36, 37, 39, 40-44, 46, 49, 50, 52, 54, and 55; for information regarding related declarations and statements see Information Circular Nos. 5, 6, 8, 12, 13, 14, 15, and 20 (to be issued), and Bulletin Nos. 38, 46, and 54.

[17] Recommended draft consolidated maritime labour convention and commentary to the recommended draft. ILO documents PTMC/04/1 and PTMC/04/2, available on the web site of ILO at http://www.ilo.org.

[18] *ILO Conference moves to improve safety, working conditions in fishing sector*. Press release ILO/04/30, dated 15 June 2004.

[19] LEG 88/13.

[20] LEG 88/12.

[21] Declaration adopted by the ILO Tripartite Working Group on Maritime Labour Standards in January 2004. LEG 88/12/3.

[22] Statement by the representative of the Seamen's Church Institute at the fourteenth Meeting of States Parties to the United Nations Convention on the Law of the Sea. SPLOS/119.

[23] See LEG 88/12.

[24] For the text, see http://www.sidsnet.org/docshare/other/20040206162842_AOSIS_strategy_final_version.pdf.

[25] Report of the Commission on Sustainable Development acting as the preparatory meeting for the International Meeting to Review the Implementation of the Programme of Action for the Sustainable Development of Small Island Developing States (14-16 April 2004). A/CONF.207/3, para. 7.

[26] *Earth Negotiations Bulletin*, vol. 8, No. 41, 3 May 2004.

[27] Preparatory Committee for the 2005 Review Conference of the Parties to the NPT, third session (26 April-7 May 2004). Chairman's summary. NPT/CONF.2005/PC.III/WP.27.

[28] The text is available at http://www-ns/iaea.org/conventions/nuclear-safety.htm.

[29] The International Conference had welcomed the proposal to extend the INES nuclear incident reporting scale to transport incidents, in the interests of transparency and communication with the public. The INES was established in 1990 for the purpose of facilitating rapid communication between the nuclear community, the media and the public regarding the significance of nuclear events. The System is described in document GC(39)/INF/8, attachment D, available on the web site of IAEA at http://www.iaea.org/About/Policy/GC/GC39/Documents/annexd-4.html.

[30] Summary of decisions of the Council of IMO at its 92nd session. Document C 92/D, section 19.

[31] It has not yet been decided whether the code will cover only mandatory instruments.

[32] European Parliament resolution on improving safety at sea (2003/2235(INI)) adopted on 20 April 2004, para. 50.

[33] See report of MEPC 51 (20 March-1 April 2004). IMO document MEPC 51/22, para. 10.25.

[34] Report available on the OECD web site at http://www.oecd.org.

[35] European Parliament resolution on improving safety at sea (2003/2235(INI)), adopted on 20 April 2004, para. 52, as well as paras. 15 and 43.

[36] Summary of decisions of the Council of IMO at its 92nd session, C 92/D, para. 5.5.

[37] See draft amendments to the FAL Convention, 1965 (FAL 31/WP.2), adopted at the 31st session of the Committee. See draft report of the 31st session of the Committee, FAL 31/WP.5 and addenda.

[38] In resolutions MSC.153(78), 155(78) and 167(78).

[39] For further details concerning the incident, see for example, UNHCR press releases available at www.unhcr.ch.

[40] IMO press briefing "Secretary-General Mitropoulos pays tribute to the efforts made to implement the ISPS Code", 1 July 2004.

[41] See C 92/D, para. 5.3.

[42] IMO document LEG 88/13.

[43] Report of the Working Group, LEG/SUA/WG.1/3.

[44] "IAEA Tracks Illicit Trafficking of Nuclear & Radioactive Material", *IAEA Bulletin*, vol. 46, No. 1, June 2004.

[45] Means of delivery are defined for the purposes of resolution 1540 (2004) as missiles, rockets and other unmanned systems capable of delivering nuclear, chemical, or biological weapons, that are specially designed for such use.

[46] Security Council resolution 1540 (2004), para. 3.

[47] Ibid., para. 10.

[48] The text of the Chairman's statement is available at http://www.state.gov/t/np/rls/other/33208.htm.

[49] Agreement Between the Government of the United States of America and the Government of the Republic of Liberia Concerning Cooperation To Suppress the Proliferation of Weapons of Mass Destruction, Their Delivery Systems, and Related Materials By Sea, signed on 11 February 2004 and provisionally applied as of that date. The text is available at http://www.state.gov/t/np/trty/32403.htm.

[50] Amendment to the Supplementary Arrangement Between the Government of the United States of America and the Government of the Republic of Panama to the Arrangement Between the Government of the United States of America and the Government of Panama for Support and Assistance from the United States Coast Guard for the National Maritime Service of the Ministry of Government and Justice, signed on 12 May 2004 and provisionally applied as of that date. The text is available at http://www.state.gov/t/np/trty/32858.htm.

[51] The International Chamber of Shipping and the International Shipping Federation updated their publication *Pirates and Armed Robbers; Guidelines on Prevention for Masters and Ship Security Officers* to take account of the ISPS Code. The new edition was published in early 2004.

[52] In March 2003, a subregional meeting on combating piracy and armed robbery against ships, held in Ghana, agreed to establish a working group to coordinate the development of a subregional integrated Coast Guard Network from Mauritania to Angola as a basis for regional cooperation, inter alia to combat piracy and armed robbery against ships in the subregion. The subregional meeting held in the Dominican Republic in January 2004 for a number of selected countries from the Latin American and Caribbean region invited ROCRAM and ROCRAM-CA in cooperation with IMO to undertake a review/revision of the regional strategy on maritime safety to cover cooperation and coordination on maritime security, including the prevention and suppression of piracy and armed robbery against ships according to an agreed action plan. Subregional Meeting on Combating Piracy and Armed Robbery against Ships, Santo Domingo, 29 and 30 January 2004. Document MSC 78/20/4. Submission by Japan to MSC 78, document MSC 78/INF.11.

[53] *Neighbours to cooperate in Malacca Straits*, United Press International, 30 June 2004.

[54] Decisions 1/2, 1/3, 1/6, Report of the Conference of the Parties to the United Nations Convention against Transnational Organized Crime on its first session, held in Vienna from 28 June to 9 July 2004.

[55] FAL 31/WP.5 and addenda.

[56] Report on the forty-seventh session of the Commission on Narcotic Drugs, *Official Records of the Economic and Social Council, 2004, Supplement No. 8* (E/2004/28), paras. 28 and 65.

[57] FAL 31/WP.5.

[58] UNEP, *Global Environment Outlook 3*, Earthscan Publications, 2002.

[59] UNEP, *GEO Yearbook 2003*, 2004.

[60] See A/51/116.

[61] *Guidelines on Municipal Wastewater Management, a practical guide for decision-makers and professionals on how to plan, design, and finance appropriate and environmentally sound municipal wastewater discharge systems*, version 3, UNEP, 2004.

[62] The report of the meeting is contained in document UNEP/GCSS VIII/8.

[63] The report on the session is contained in *Official Records of the Economic and Social Council, 2004, Supplement No. 9* (E/2004/29).

[64] National programmes of action for the protection of the marine environment from land-based activities represent national implementation of the 1995 Global Programme of Action (see http://www.gpa.unep.org.)

[65] The Cairns Communiqué, Hilltops-2-Oceans (H_2O) Partnership. At the time of writing the proceedings of the Conference were not yet available.

[66] For the text of revised annex IV, see report of the 51st session of MEPC (29 March-1 April 2004), MEPC 51/22, annex 5.

[67] Ibid., annex 6.

[68] Belgium, France, Ireland, Portugal, Spain and the United Kingdom from the Shetland Islands in the North to Cape Vicente in the South.

[69] See report of the Working Group on Ships' Routeing, NAV 50/WP.3, annex 12.

[70] NAV 50/WP.10 and addenda.

[71] Ibid.

[72] European Parliament resolution on improving safety at sea, see note 32 above, para. 39.

[73] Ibid., paras. 8.16-8.56 and statement by the delegation of the Russian Federation in annex 8.

[74] Proposals to review the PSSA Guidelines by Liberia, Panama and the Russian Federation (MEPC 51/8/3), and by the Baltic and International Maritime Council, the International Chamber of Shipping, the International Association of Dry Cargo Shipowners, the International Association of Independent Tanker Owners, the Oil Companies International Marine Forum and the International Parcel Tankers Association (MEPC 51/8/4). See also MEPC 51/22, paras. 8.5-8.15.

[75] The findings and a companion paper on the impact of anthropogenic CO_2 on the chemistry of the oceans and the potential response of certain marine species to the changes in CO_2 levels were published in the 16 July 2004 issue of the journal *Science*.

[76] Information on the symposium can be found at http://ioc.unesco.org/iocweb/co2panel/HighOceanCO2.htm.

[77] Press release, 1 July 2004, available at http://www.basel.int/press/presrel010704.doc.

[78] IMO uses the term "recycling", the Basel Convention "dismantling" and ILO "breaking".

[78] For the terms of reference of the Correspondence Group on Ship Recycling, see MEPC 51/22, annex 4.

[79] Document MEPC 51/3.

[81] For the terms of reference of the Joint Working Group, see MEPC 51/22, annex 3.

[82] See decision OEWG-III/3, para. 3.

[83] A/59/62, para. 197.

[84] See A/54/429 of 30 September 1999, para. 546.

[85] See A/58/65/Add.1, para. 103.

[86] See IOC/ABE-LOS IV/7.

[87] See the report of IOC/ABE-LOS IV in document IOC/ABE-LOS IV/3.

[88] See IOC Assembly resolution XXII-12.

[89] See resolution EC-XXXV/1.8.

[90] Resolution EC-XXXVII.6.

[91] See IOC web site on TEMA: http://ioc.unesco.org/tema/temaProgramme.htm.

[92] *Official Records of the General Assembly, Fifty-eighth Session, Supplement No. 4* and corrigendum (A/58/4 and Corr.1) and *Official Records of the General Assembly, Fifty-ninth Session, Supplement No. 4* (A/59/4).

[93] A/59/62 of 4 March 2004.

[94] See A/58/65/Add.1 of 29 August 2003.

[95] See *UNEP Programmes and Resources for Environmental Education and Training: An Introductory Guide*, 2004, pp. 11 and 53.

[96] Financial support will also be provided to defray the costs of participation of members of the Commission at the fourteenth session in August-September 2004. The details of this will be available in the next report.

[97] A regular process for the global reporting and assessment of the state of the marine environment, including socio-economic aspects.

[98] A/58/423.

[99] C. M. Johnston, "Scoping study: Protection of vulnerable high seas and deep oceans biodiversity and associated oceans governance", Joint Nature Conservation Committee, Peterborough, 2004, p. 1.

[100] UNEP-World Conservation Monitoring Centre (WCMC) contribution.

[101] C. M. Johnston, *op. cit.*, pp. 8-9.

[102] R. K. O'Dor, *The Unknown Ocean*, Baseline Report of the Census of Marine Life, Consortium for Oceanographic Research and Education, Washington, D.C., 2003.

[103] UNEP-WCMC contribution.

[104] A. D. Rogers, "The biology of seamounts", *Advances in Marine Biology*, vol. 30, 1994, pp. 306-350.

[105] Ibid.

[106] Ibid.

[107] A. Freiwald and others, *Cold-water Coral Reefs*, UNEP-WCMC, Cambridge, United Kingdom, 2004.

[108] http://www.ices.dk/marineworld/deepseacorsi.asp.

[109] Freiwald and others, op. cit.

[110] H. H. Fossa, P. B. Mortensen and D. M. Furevik, "The deep water coral lophelia pertusa in Norwegian waters: distribution and fishery impacts", *Hydrobiologia*, vol. 471, issue 1-3, March 2002.

[111] Rogers, op. cit., p. 348.

[112] Fossa and others, op. cit.

[113] A. J. Butler and others, *A Review of Biodiversity of the Deep Sea*, Environment Australia, Canberra 2001, p. 28.

[114] S. K. Juniper, *Deep-sea Hydrothermal Vents and Seep Habitats and Related Governance Issues*, Workshop on the Governance of High Seas Biodiversity Conservation, Cairns, Australia, 2003.

[115] Ibid.

[116] Butler and others, op. cit.

[117] Ibid., p. 29.

[118] Juniper, op. cit.

[119] *The Status of Natural Resources on the High Seas*, an independent study conducted by the Southampton Oceanography Centre and A. C. de Fontaubert, WWF International, IUCN, 2001, pp. 45-48.

[120] Ibid.

[121] UNEP/CBD/COP/5/INF/7.

[122] See *The New York Times*, 3 August 2004, p. F4.

[123] Butler and others, op. cit.

[124] C. R. Smith, "The Biological Environment in the Nodule Provinces of the Deep Sea", in *Deep Seabed Polymetallic Nodule Exploration: Development of Environmental Guidelines*, Proceedings of the International Seabed Authority's Workshop held in Sanya, Hainan Island, People's Republic of China, 1-5 June 1998 (ISA/99/02).

[125] Ibid.

[126] Butler and others, op. cit.

[127] *The Status of Natural Resources on the High Seas*, op. cit., pp. 53-58.

[128] Ibid.

[129] *Arctic Flora and Fauna: Status and Conservation*, 2001, available at http://www.caff.is.

[130] Statement by Gunnar Pálsson, Chair of Senior Arctic Officials, Fourth meeting of the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea, New York, 2-6 June 2003.

[131] *Thawing Polar Ice Cap Threatens Ancient Arctic Basin*, Environment News Service, 24 June 2004.

[132] UNU/IAS Report, *The International Regime for Bioprospecting — Existing Policies and Emerging Issues for Antarctica*, August 2003.

[133] UNEP-WCMC contribution.

[134] Ibid.

[135] Ibid.

[136] Document submitted to ICP at its fourth meeting by the delegation of the Netherlands (A/AC.259/8).

[137] Fossa and others, op. cit., p. 41.

[138] Agenda 21, chap. 17, para. 18.

[139] A Japanese research team has found that plutonium particles from nucleon tests in the Bikini Atoll in the 1950s have been accumulating in sea areas close to Japan carried by ocean currents for over 50 years. Kyodo news agency, 1 August 2004.

[140] UNEP-WCMC contribution.

[141] See http://www.marine-litter.gpa.unep.org/facts/what-where.htm.

[142] In this regard, species particularly at risk are marine mammals, sea turtles, sea birds, fish, crustaceans and corals.

[143] Plastics make up most of the marine litter worldwide. It is estimated that the proportion of plastic varies between 60 and 80 per cent of total marine debris. José G. B. Derraik, "The pollution of the marine environment by plastic debris: a review", *Marine Pollution Bulletin*, vol. 44, issue 9, September 2002.

[144] Ibid.

[145] David K. A. Barnes, "Invasions by marine life on plastic debris", *Nature*, vol. 416, 25 April 2002, pp. 808-809.

[146] See Ruhl and Smith, "Shifts in deep-sea community structure linked to climate and food supply", *Science*, 2004, vol. 305, No. 5683, pp. 513-515.

[147] UNEP/CBD/SBSTTA/9/INF/12, para. 46.

[148] UNEP-WCMC contribution.

[149] Ibid.

[150] S. Raaymakers (Marine Environment Division, IMO), Workshop on the Governance of High Seas Biodiversity Conservation, Cairns, Australia, 2003.

[151] "Whales traffic warning", *The New York Times*, 16 December 2003.

[152] See M. Simmonds and others, *Oceans of Noise: A WDCS Science Report*, 2003; K. N. Scott, "International regulation of undersea noise", *ICLQ*, vol. 53, issue 2, April 2004; and J. Cummings and N. Brandon, *Sonic Impact: A Precautionary Assessment of Noise Pollution from Ocean Seismic Surveys*, Greenpeace, June 2004.

[153] R. D. McCauley, J. Fewtrell and A. N. Popper, "High intensity anthropogenic sound damages fish ears", *Journal of the Acoustical Society of America*, vol. 113, issue 1, January 2003, pp. 638-642.

[154] Some scientists defend at least some level of ocean dumping. A study considers that some waste disposal at sea (e.g. of offshore platforms and radioactive waste) would have minor consequences for the marine environment. GESAMP (IMO/FAO/UNESCO-IOC/WMO/WHO/IAEA/UN/UNEP Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection) and Advisory Committee on Protection of the Sea, *A Sea of Troubles*, GESAMP Reports and Studies No. 70, 2001 (hereinafter GESAMP — *A Sea of Troubles*).

[155] Butler and others, op cit., p. 20.

[156] Freiwald and others, op. cit., p. 41.

[157] Butler and others, op. cit., p. 21.

[158] *The Status of Natural Resources on the High Seas*, op. cit., p. 32. Evidence shows that sludge-derived material has infiltrated the tissue of fishes and the benthic food web at least at one dumpsite. Butler and others, op. cit., p. 21.

[159] A/59/62, paras. 184-185.

[160] UNEP-WCMC contribution. The change in seawater alkalinity (pH) would impair the ability of corals to lay down calcium carbonate framework structures. See Freiwald and others, p. 41.

[161] *Proceedings of the International Seabed Authority Workshop*, 26-30 June 2000, Kingston, Jamaica, Executive Summary, presentation by Alexander Vysotsky.

[162] UNEP contribution.

[163] Freiwald and others, op. cit., p. 40.

[164] C. R. Smith, op. cit.

[165] Ibid.

[166] *Proceedings of the International Seabed Authority Workshop*, 26-30 June 2000, Kingston, Jamaica, Executive Summary, presentation by S. K. Juniper.

[167] Ibid., presentation by James Hein.

[168] For more information see the report of the fifth meeting of the ICP, A/59/122, para. 70-71.

[169] For more details on activities related threats, see reports A/58/65, para. 195, and A/59/62, paras. 246-249; and report of the fifth meeting of the ICP, op. cit.

[170] Freiwald and others, op. cit., p. 41.

[171] R. Glaholt, M. Nunas and S. Ong, "An investigation into the influence of marine pipelines and cables on 'Benthic ecology and biodiversity'", *Proceedings of the Seventh International Symposium on Environmental Concerns in Rights-of-Way Management*, 9-13 September 2000, Calgary, Canada.

[172] UNEP-WCMC contribution.

[173] Freiwald and others, p. 40.

[174] A/59/62, para. 269.

[175] E. Duncan, *Oases on the Ocean Floor*, 19 June 2002, WWF Newsroom, available at http://www.panda.org/news_facts/newsroom/features/news.cfm?uNewsId=2593&uLangId=1. See also Butler and others, op. cit., p. 33.

[176] It is thought that the bright lights from submersible vehicles may damage the sensitive eyes or light receptive organs of some vent animals. Baker and others, op. cit., p. 19.

[177] Presentation by S. K. Juniper at the fifth meeting of the ICP.

[178] S. K. Juniper and L. Glowka, "A code of conduct to conserve and sustainably use hydrothermal vent sites", *InterRidge News*, Spring 2003, vol. 12(1), p. 8. See also paras. 304-305 below.

[179] GESAMP — *A Sea of Troubles*, p. 24.

[180] A. P. Negri, L. T. Hales, C. Battershill, C. Wolff and N. S. Webster, "TBT contamination identified in Antarctic marine sediments", *Marine Pollution Bulletin*, vol. 48, issues 11-12, June 2004, pp. 1142-1144.

[181] *Report of the United Nations Conference on the Human Environment, Stockholm, 5-16 June 1972* (United Nations publication, Sales No. E.73.II.A.14 and corrigendum), chap. I.

[182] General Assembly resolution 37/7, annex.

[183] *Report of the United Nations Conference on Environment and Development, Rio de Janeiro, 3-14 June 1992* (United Nations publication, Sales No. E.93.I.8 and corrigenda), vol. I: *Resolutions adopted by the Conference*, resolution 1, annex I.

[184] *Report of the World Summit on Sustainable Development, Johannesburg, South Africa, 26 August-4 September 2002* (United Nations publication, Sales No. E.03.II.A.1 and corrigendum), chap. I, resolution 1, annex.

[187] Contained in the annex to document ISBA/6/A/18, 13 July 2000.

[188] The section is based on the contribution provided by the CBD secretariat for this report.

[187] See decision VII/15 of the seventh Meeting of the Conference of the Parties to CBD.

[189] The Convention mandates the conclusion of multilateral agreements and memorandums of understanding for the conservation and management of migratory species listed in Appendix II, several of which specifically cover marine wildlife, including cetaceans, turtles, seals, and birds that migrate over the ocean. Agreements to protect marine species include: the Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area; the Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas; the Memorandum of Understanding concerning the Conservation Measures for Marine Turtles of the Atlantic Coast of Africa; the Memorandum of Understanding on the Conservation and Management of Marine Turtles and their Habitats of the Indian Ocean and South-East Asia; the Agreement on the Conservation of Albatrosses and Petrels; and the Agreement on the Conservation of African-Eurasian Migratory Waterbirds.

[189] For details of the species listed at that meeting, see A/58/65, para. 148.

[190] CMS/ScC12/Doc.2.

[191] CoP13 Doc. 60.

[192] See A/59/62, paras. 144-145 and 172-174 for details.

[193] For further details on the Convention generally, see A/59/62, paras. 179-181.

[194] The 1996 London Protocol is expected to enter into force in 2005.

[195] A/51/116, annex II.

[196] *Report of the World Summit on Sustainable Development, Johannesburg, South Africa, 26 August-4 September 2002* (United Nations publication, Sales No. E.03.II.A.1 and corrigendum), chap. I, resolution 1, annex.

[197] UNEP-WCMC contribution.

[198] *Report of the World Summit on Sustainable Development* ..., chap. I, resolution 1, annex, para. 32.

[199] Convention for the Protection of the Mediterranean Sea against Pollution, adopted on 16 February 1976 by the Conference of Plenipotentiaries of the Coastal States of the Mediterranean Region for the Protection of the Mediterranean Sea, held in Barcelona, Spain. The Convention entered into force on 12 February 1978. The original Convention has been modified by amendments adopted on 10 June 1995 by the Conference of Plenipotentiaries on the Convention for the Protection of the Mediterranean Sea against Pollution and its Protocols, held in Barcelona on 9 and 10 June 1995 (UNEP(OCA)/MED IG.6/7). The amended Convention, recorded as the "Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean", has not yet entered into force.

[200] See A/59/62, para. 202.

[201] Statement by John Roberts on behalf of OSPAR at the fifth meeting of the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea, 7-11 June 2004, United Nations Headquarters, New York.

[202] UNEP contribution.

[203] Inter alia, the Agreed Measures for the Conservation of Antarctic Fauna and Flora (1964), adopted under article IX of the Antarctic Treaty, include provisions for the protection of Antarctic native flora and fauna and prohibit the bringing into the Antarctic Treaty area of any species of animal or plant not indigenous to that area, except in accordance with a permit. They were largely updated and given conventional status by annex II to the Madrid Protocol.

[204] The 1988 Convention on the Regulation of Antarctic Mineral Resource Activities has not entered into force and has been superseded by the mining prohibition in the Madrid Protocol.

[205] See the report of the Secretary-General on sustainable fisheries (A/59/298).

[206] There is at present no known commercial sealing taking place in Antarctica.

[207] Annex IV to the Madrid Protocol prohibits discharges of oil and the dumping of sewage, plastic and garbage.

[208] Annex V establishes Antarctic Specially Protected Areas (ASPAs) and Antarctic Specially Managed Areas (ASMAs).

[209] The members of the Arctic Council are: Canada, Denmark, Finland, Iceland, Norway, the Russian Federation, Sweden and the United States of America.

[210] On the Circumpolar Biodiversity Monitoring Program, see para. 127 above.

[211] See for example Commission on Sustainable Development decision 7/1, annex, para. 26; Plan of Implementation of the World Summit on Sustainable Development, para. 32 (c); General Assembly resolutions 57/141, para. 53, and 58/240, para. 54; decisions VII/5 and VI/28 of the Conference of the Parties to the Convention on Biological Diversity; the Durban Action Plan, developed by the fifth World Conservation Union (IUCN) World Parks Congress, September 2003.

[212] See UNEP/CBD/COP/7/21 and, for a summary of the relevant decisions, A/59/62, paras. 223-228.

[213] See A/59/122.

[214] For details of the contents of the draft code, see A/59/62, para. 249.

[215] Statement delivered by Satya N. Nandan, Secretary-General of the International Seabed Authority, at the fifth meeting of ICP.

[216] The following paragraphs summarize points from a special section on vulnerable ecosystems in the report of the Secretary-General on sustainable fisheries (A/59/298), as requested in para. 46 of resolution 58/14.

[217] Michel J. Kaiser and others, "Impacts of fishing gear on marine benthic habitats", in *Responsible Fisheries in the Marine Ecosystem*, Sinclair & Valdimarsson, eds., 2003, p. 198.

[218] For example Norway has banned the use of all dragged fishing gear to protect cold water corals; New Zealand has closed fishing on a number of seamounts.

[219] Articles III and VI.

[220] For texts of International Plans of Action, see FAO 1999, ISBN 92-5-104332-9, and FAO 2001, ISBN 92-5-104601-8. The texts are also available on the FAO web site from http://www.fao.org/figis/servlet/static?dom=org&xml=ipoas_prog.xml&xp_lang=en&xp_banner=fi&xp_banner=fi.

[221] For the purposes of this report, the expression RFMO also covers FAO regional fisheries bodies (RFBs) established in accordance with article XIV of the FAO Constitution.

[222] See A/58/215, paras. 30-39.